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LEGAL INTELLIGENCE.

BUILDERS' NAMES OF STREETS.—At Highgate on Wednesday, Mr. William Jeffreys Collins, builder, of Fortismere, Fortis Green, appeared in answer to an adjourned summons taken out at the instance of the Hornsey District Council charging him with having procured the defacement of the name of a certain street at Muswell-hill. Mr. L. J. Tatham, solicitor, on behalf of the district council, explained that the summons was taken out under the provisions of the Town Improvement Clauses Act. Mr. Collins was the owner of a building estate at Muswell-hill, adjoining the house and estate of a Mr. Arnold, known as Midhurst, which had a beautiful avenue of trees of 45 years' growth upon it. Mr. Collins made a new road running parallel with this old avenue, and named the new road Midhurst-avenue. Mr. Arnold objected to this, and communicated with the district council on the subject. Mr. Collins was invited to alter the name, but he replied ironically, suggesting that it should be called Arnold-avenue. The council subsequently named the street Collingwood-avenue, and affixed the name conspicuously at one entrance. This name was twice painted out by Mr. Collins's orders. Mr. Forbes, solicitor, on behalf of the defendant, contended that the council had no jurisdiction to change the name, and quoted the case of "Anderson v. The Mayor and Corporation of Dublin," in which it was held in 1885 that the defendants had no power to change the name of Sackville-street to O'Connell-street. The Bench convicted Mr. Collins, and fined him 1s. and costs.

WATER SUPPLY AND SANITARY MATTERS.

WEST BROMWICH.—An exhaustive report on the new bacterial treatment of sewage at Friar Park, West Bromwich, has been issued by the borough surveyor, Mr. A. D. Greatorex. Having described the scheme necessary in his opinion for dealing with the whole of the sewage of West Bromwich in a satisfactory manner, he points out that the estimated cost of these works would be £15,000.

CHIPS.

Christ Church, Chester, was reopened last week after rebuilding, at a cost of over £7,000.

On Saturday week, at St. Faith's, Stoke Newington, the Mayor of Stoke Newington, Mr. J. J. Rantz, J.P., unveiled the memorial window to the British soldiers and sailors who have fallen in South Africa. This window—the seventh—completes the windows in the sanctuary and chancel. The three sanctuary windows represent the Crucifixion, the Epiphany, and the Good Shepherd; the remaining four represent the Glorious Company of the Apostles, the Godly Fellowship of the Prophets, the Noble Army of Martyrs, and the Holy Church throughout the World in adoration. The windows, each 18ft. by 6ft., have all been executed by Mr. G. J. Baguley, of Newcastle-on-Tyne.

The Archbishop of Canterbury will visit Chichester on April 16, to be present at the dedication of the new north-west tower of the cathedral and the opening of the additional buildings of the Bishop Otter Memorial College. The exterior of the tower is now completed to the full height of 96ft., its erection having occupied two and a half years. There still remains a certain amount of inferior work to be done, but all will be finished in good time for the dedication. The whole of the expenditure on the chapel of St. Clement in memory of the late bishop has now been provided for. The restoration of the chapel originated in the fund raised in honour of the memory of Bishop Darnford by those whom he had confined; and this fund of £173 provided the "necessaries" of the restoration, the altar, the Purbeck and white marble platform on which it stands, the retable, and the aumbry.

Mr. W. A. Ducat, one of the Inspectors of the Local Government Board, on Wednesday week held an inquiry at the Moot Hall, Longtown, Cumberland, into an application by the Longtown Rural District Council for sanction to borrow £17,000 for works of water supply for the parish of A-thuret and the townships of Kirkandrews Middle Quarter, Kirkandrews Moat, and Kirkandrews Nether. The scheme had been prepared by Mr. Little, of Carlisle.

On New Year's Day the foundation-stone was laid of a Congregational chapel at Brislington, Bristol. The building, which is in Wick-lane, is to be of Pennant stone with Bath stone facings, and the cost will be about £3,500. Mr. Frank Wills is the architect, and the contract has been entrusted to Messrs. Cowlin and Son, also of Bristol.

The parish church of Halse, Somerset, has been rededicated after restoration at a cost of £2,000. The high pews have been replaced by open seats in oak, a new floor has been laid down, the gallery has been removed, and a new altar, rails, and a marble paving in the sanctuary have been provided.

STAINED GLASS.

EDINBURGH.—The design for the memorial window to Major-General Wauchope, to be placed in St. Giles' Cathedral, has now been selected by the committee of contributors, and the artists, Messrs. Ballantine and Gardiner, are proceeding with the stained glass. The window is a large one, composed of five lower and five upper compartments, with tracery, and is situated in the south aisle. The design is illustrative of the story of Jonathan. In the lower tier is represented the subject of the Covenant between David and Jonathan. In the centre are the two principal figures, Jonathan in the act of giving his robe to David. Figures of Abner and Saul are on either side, and upon the extreme right and left are other accessory figures. The upper tier has in the centre David mourning the death of Jonathan. On the left is the Amalekite making obeisance, and laying at David's feet the crown and bracelet of Saul. In the adjoining lights other figures are grouped in sympathy with David's grief. The tracery contains St. Michael and guardian angels, and in two of the piers are introduced the Stars of Military Companion of the Order of the Bath and of Honorary Companion of the Most Distinguished Order of St. Michael and St. George. There is also space provided at the foot for the memorial and dedicatory inscription.

LLANFAFF.—The two side-lights of the triplet of windows in the west front of Llandaff Cathedral have just been filled with stained glass, thus completing the entire suite of the group and that in the gable above. The light on the north side has been erected in memory of the late Dean Williams, who completed the restoration of the edifice. It represents Nehemiah superintending the building of the walls of Jerusalem. Both below and above this panel are large figures of angels, one bearing a model of the church to symbolise the special work of the deceased dean. This window is the gift of Mr. J. P. Seddon, the cathedral architect. The window on the south side has similar angels to those described in the other light above and below a panel, and both are surmounted by canopy work, and surrounded by ornamental scroll work. Both these windows are from the designs of Mr. J. P. Seddon, the diocesan architect, of the firm of Messrs. Seddon and Carter, of Cardiff, and have been drawn and executed by Mr. H. G. Murray, of London.

The Town Council of Brighton have raised the salary of Mr. Francis J. C. May, the borough engineer and surveyor, from £700 per annum to £800.

The general purposes committee of the Lambeth Borough Council reported at the last meeting of the council upon the plans for new buildings on the site of Maudslay's engineering works in Belvedere-road. Provision will be made for 300 tenements, equal to 730 rooms. It was decided to ask the Home Secretary not to fix the rents until he had heard representations from the council. The salaries of the medical officer of health and borough surveyor were fixed at £800 each.

Messrs. Baxter and Boyne, contractors, of Melbourne, have secured the contract for the extension of the new Stock Exchange at Sydney, N.S.W., the price being £15,050, and the work to be completed within twelve months. The new building will comprise seven stories, including basement; its frontage to Pitt-street will be 50ft. with a depth of 155ft. On the ground floor to the rear there will be a large public room. Messrs. Baxter and Boyne have also secured the contract for the Walker Trust Building, which is to occupy the site adjoining the proposed new Stock Exchange. The frontage of this structure is to be 41ft. to Pitt-street, with a depth of 161ft. It will have the same number of stories as the Stock Exchange, and will be devoted entirely to office purposes. The contract price for this building is £12,650, and it is to be completed in the same time as the Stock Exchange. The quantities for both buildings were prepared by Mr. W. Thompson, and the plans were prepared by Messrs. Sulman and Power, architects, Sydney.

The North German Lloyd Steamship Company has decided to rebuild on the former site its Hoboken terminal which was burned last summer. There will be three pile piers, with fireproof deck and fireproof steel sheds, designed by Mr. W. F. Whittemore, of Hoboken, consulting engineer to the company. The estimated cost is about £400,000 sterling, and contracts for all the work have been awarded to Messrs. R. P. and J. H. Staats, New York. Construction will be commenced immediately, and will be completed in about eighteen months.

At Hawkesyard Dominican Priory, Warwickshire, last week, the new reredos was consecrated. It is Perpendicular in style, and follows the treatment of the one at Winchester Cathedral. It has been executed in white stone, with a profusion of glory and colouring. The design has been prepared by Mr. E. Goldie, of London.

Trade News.

WAGES MOVEMENTS.

BUXTON.—The men of the Buxton Lime Firms, Ltd., are on strike. The dispute is not about wages. At the beginning of each year they have to sign on for twelve months. This they refuse to do, and they are supported by the Gasworkers' and General Labourers' Union. The company will permit them to work only on condition that they sign.

THE GRANITE TRADE IN SCOTLAND.—Balancing one department against another, the granite trade of the North, of which Aberdeen is the centre, has enjoyed during the year just closed another spell of exceptional prosperity. If the abnormal activity in the local building trade has shown signs of a little slackening, the demand for paving material shows an increase; and while the monumental yards have been dull during the past month, there has, on the other hand, been no diminution in the orders for dressed and polished works. The increased demand for setts and paving material is due to the numerous electric tramways at present in course of construction all over England and Scotland. New bridges and docks—the latter principally on the East Coast—have brought large orders to the North. Of foreign granite the quantity landed at Aberdeen Harbour during the past year was 11,861 tons, so that this increase of 1,648 tons points to the continued growth of an important branch of the stone trade. A new industry has sprung up within the past two or three years—the manufacture of granite waste slabs—which is rapidly growing in importance. The quarry debris, which was formerly allowed to remain unutilised, is now pulverised, and out of this dust pavement stones are made. The quantity of this material exported from Aberdeen Harbour during the year ending Sept. 30, 1900, was 4,184 tons, or exactly double the export of the previous year. That was exclusive of what was sent away by road and rail. The building trade in the city of Aberdeen, while still brisk, falls below its last year's record. From November, 1899, to the end of November, 1900, the estimated value of the buildings sanctioned by the plans committee of the town council was £318,109, or a reduction of 25½ per cent. compared with the value in the previous year.

Ayrshire County Council have prepared a bill with relative plans for the alteration and extension of the Ayr County Buildings, and to obtain powers to assess for the extension scheme and for the maintenance of the buildings. The buildings were erected 80 years ago under a special Act of Parliament; but no provision was then made for their upkeep or alteration by an assessment, and they have had to be self-supporting.

There has just been erected in the Unitarian Church, Blackwater-street, Rochdale, as a special gift, a carved oak organ screen. It has been designed in the Perpendicular style, and is a part-closed screen. The lower portions are raised and ornamented with "linen panels." The transom line is richly carved, and rising from this are four bays pierced in their lower parts and above having ogee and crocketed heads. Still higher is much flowing tracery. The whole is surmounted by a carved and embattled cornice. This screen, like the font cover and the carved screen in the vestibule of the church, was designed by Messrs. Butterworth and Duncan, architects, of Rochdale, and has been carried out by Messrs. Harry Hems and Sons of Exeter.

On New Year's Eve the bishop of the diocese opened the new church of St. Aidan's at Carlisle, the foundation-stone of which was laid fifteen months ago by the Duchess of Devonshire. The church will accommodate 700 people, and the consecration will take place between Easter and Whitsuntide.

At Manchester Town Hall on the 1st inst. an inquiry was held by Mr. H. Percy Boulnois, inspector under the Local Government Board, regarding the application of the corporation to borrow the sum of £12,000 for the purpose of transforming the Brockdale estate, Newton Heath, into a park and recreation ground; to borrow £2,487 for the purchase of land for police-station purposes, and £513 for the purchase of land for fire-station purposes.

The official opening of the new Victoria Board Schools, which have been erected on the Cae Shack, Wrexham, at a cost of £15,000, took place on Monday. In August, 1898, the school board accepted the plans of Mr. W. Moss, Wrexham, his plans being adjudged by Mr. W. E. Willink, of Liverpool, as the best. The tender of Mr. W. E. Samuel, Wrexham, amounting to £11,519, was accepted. The architect and the clerk of the works, Mr. W. L. Walker, are both old boys of the British School. There will be accommodation for 1,000 children, and there is a workshop for the boys and a cookery-room for the girls.

Our Office Table.

MR. JOHN AIRD, M.P., one of half a dozen newly-created baronets, is 67 years of age. He is partner in the firm of John Aird and Co. and John Aird and Sons, contractors, of Great George-street, Westminster, and served on the Royal Commission on Trade. At the present moment Mr. Aird's firm are engaged in the construction of the Assouan Dam across the Nile, and the extensive irrigation works in Egypt, which, it is believed, will materially advance the prosperity of portions of the Nile Valley. Mr. Aird, who has represented North Paddington as a Conservative since 1887, was, in November last, elected the first Mayor of the Borough of Paddington. Among those upon whom the distinctions of C.M.G. is confirmed are two well-known engineers who have carried out extensive undertakings in the Colonies, Mr. William Shelford, M.I.C.E., consulting engineer for West African Light Railways, and Mr. William Matthews, M.I.C.E., consulting engineer for harbour work in the Colonies. The like decoration has been conferred on Mr. Francis Alfred Cooper, M.I.C.E., Director of Public Works of the Island of Ceylon, and on Mr. Thomas Robertson Marsh, on retirement as head of the engineering and contract branches of the office of the Crown Agents for the Colonies.

GENERAL regret will be felt at the fact just reported by Mr. Arthur Newall, of Wilsford House, Salisbury, that two of the stones of the outer circle of Stonehenge fell on the last evening of the 19th century. One of them is a large, upright Sarsen stone, and the other is the lintel, also of Sarsen, with yellow gravel and flint imbedded in it. These are the only stones which have fallen since Charles II. made excavations at the base of one to ascertain on what foundation the stones are placed, whilst staying at Hele House after the battle of Worcester.

THE twenty-fifth annual art exhibition at Paisley, opened last week, contains a display of 335 pictures. Two portraits by George Morland, a Spanish Bacchante by John Phillip, an old mill by David Cox, and Orchardson's "Farmer's Daughter" are among the most attractive works. Other paintings of note are landscapes by Theodore Rousseau, Alfred East, Macchellar, and A. K. Browne, a shipwreck by Sam Bough, genre works by Arthur Melville, William Barr, and W. Pratt, and cattle scenes by Stroyon, Grant Stevenson, and A. Kay. The chief water-colours are by Fulton Browne and R. B. Nisbet.

A DECIDED want of vigour has, the *Estates Gazette* reports, marked business at the London Auction Mart during the greater part of 1900. This is referred to a certain timidity on the part of vendors—probably due to the war—and to the consequent falling off in the supply of properties for sale. Generally, however, for such properties as have been offered there has been a fair demand, and prices have been well maintained. London residential properties and shops in main thoroughfares have been readily disposed of. City sites and properties realised good prices, or were let at high rentals when submitted to auction. Only a moderate number of important estates were brought into the market, and a few changed hands at excellent prices. Metropolitan building estates again figured prominently in the year's sale returns. Freehold ground rents sold with the usual readiness, but at ordinary prices. The extent of the falling off is shown by a comparison of the following figures for 1899 and 1900:—For 1899 the total of the sales at the Mart was £6,290,314, whilst for 1900 it was only £4,934,769, a decrease of £1,355,545.

THE New York Tenement-House Commission has had inspections made in different parts of the city, to see whether the laws in regard to tenement-house construction are strictly carried out, and has discovered that, far from being complied with, they are violated in the great majority of cases. The Commissioner of Buildings, on whom the duty devolves of enforcing the laws in such matters, excuses himself by saying that his force of inspectors is too small to examine all the buildings put up in the city, and it seems that practically the proprietors of tenement-houses build them as they choose. As the *Scientific American* remarks, no improvement in the construction or arrangement of tenement-houses can be hoped for as

long as this state of thing prevails. No prudent man will build tenements in accordance with the law, knowing that he will have to compete for tenants with his neighbour, who has simply left out all the fire-escapes, brick walls, and incombustible staircases called for by the statutes, and can afford to rent his rooms more cheaply in consequence.

THE construction of the power works at Messina, on the St. Lawrence river, is progressing rapidly. This plant, which will commence the supply of electricity in July next, is to be of larger capacity than even the Niagara plant. Since 1895 there have been installed at Niagara ten Westinghouse electric generators of 5,000 H.P. capacity each. For the St. Lawrence Power Company fifteen Westinghouse generators of 5,000 H.P. each are under construction, this being the largest single order yet placed for electrical plant. The power-house is being built on the bed-rock of the Grasse river, and will be about 700ft. long by 150ft. wide. Each turbine will consist of a set of six wheels, produce 6,000 H.P., and be directly coupled to one generator. The height of the power-house will be 60ft., and an 85-ton overhead travelling crane, electrically operated, will traverse the full length of the building. The town of Messina is situated between the St. Lawrence and Grasse rivers, which at this point are almost parallel streams, separated by a distance of less than three miles, and with the St. Lawrence about 36ft. higher than the Grasse. The canal conveying the water from the St. Lawrence to the power-house is large enough to accommodate large lake vessels, and in the future a lock will probably be constructed to pass these vessels to and from the canal and the Grasse river. The deepening of the latter would make Messina both a lake port and a seaport. The canal is 15,200ft. long, 192ft. wide at the water-line, and 18ft. deep. To develop 75,000 H.P. the canal will need to be widened to a width of 263ft., and the Grasse river will have to be deepened.

MEETINGS FOR THE ENSUING WEEK.

MONDAY.—Royal Institute of British Architects. Discussions on "The Revised Suggestions for Conducting Competitions," and "The Status of the Profession." Business Meeting. 8 p.m.

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IRON, &c.		Per ton.	Per ton.
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Rolled-Steel Joists, English.....	9 0 0	to	10 0 0
Wrought-Iron Girder Plates.....	9 0 0	to	9 15 0
Bar Iron, good Staffs.....	8 7 6	to	9 7 6
Do., Lowmoor, Flat, Round, or Square.....	20 0 0	to	20 0 0
Do., Welsh.....	5 15 0	to	5 17 6
Boiler Plates, Iron—			
South Staffs.....	7 17 6	to	8 5 0
Best Smedshill.....	13 0 0	to	13 10 0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £6 15s.

Builders' Hoop Iron, galvanised, £15 10s. 9d. per ton.

Galvanised Corrugated Sheet Iron—

8ft. gauge	8ft. long, inclusive	Per ton.	No. 18 to 20.	No. 22 to 24.
Best ditto	£12 5 0	.....	£12 10 0
		13 15 0	.....	13 0 0
		Per ton.		Per ton.
Cast-Iron Columns.....	£9 0 0	to	£9 10 0
Cast-Iron Stanchions.....	11 15 0	to	12 15 0
Rolled-Iron Fencing Wire.....	11 15 0	to	12 15 0
Rolled-Steel Fencing Wire.....	13 0 0	to	14 0 0
" " Galvanised.....	8 5 0	to	6 10 0
Cast-Iron Sash Weights.....	12 0 0	to	13 0 0
Cut Clasp Nails, 8in. to 6in.....	11 15 0	to	12 15 0
Cut Floor Brads.....	11 15 0	to	12 15 0

Wire Nails (Points de Paris)—

0 to 7 8 9 10 11 12 13 14 15 B.W.G.

11/- 11 1/2 11 3/4 12 12 1/2 13 13 1/2 14 14 1/2 15 15 1/2 16 16 1/2 17 17 1/2 18 18 1/2 19 19 1/2 20 20 1/2 21 21 1/2 22 22 1/2 23 23 1/2 24 24 1/2 25 25 1/2 26 26 1/2 27 27 1/2 28 28 1/2 29 29 1/2 30 30 1/2 31 31 1/2 32 32 1/2 33 33 1/2 34 34 1/2 35 35 1/2 36 36 1/2 37 37 1/2 38 38 1/2 39 39 1/2 40 40 1/2 41 41 1/2 42 42 1/2 43 43 1/2 44 44 1/2 45 45 1/2 46 46 1/2 47 47 1/2 48 48 1/2 49 49 1/2 50 50 1/2 51 51 1/2 52 52 1/2 53 53 1/2 54 54 1/2 55 55 1/2 56 56 1/2 57 57 1/2 58 58 1/2 59 59 1/2 60 60 1/2 61 61 1/2 62 62 1/2 63 63 1/2 64 64 1/2 65 65 1/2 66 66 1/2 67 67 1/2 68 68 1/2 69 69 1/2 70 70 1/2 71 71 1/2 72 72 1/2 73 73 1/2 74 74 1/2 75 75 1/2 76 76 1/2 77 77 1/2 78 78 1/2 79 79 1/2 80 80 1/2 81 81 1/2 82 82 1/2 83 83 1/2 84 84 1/2 85 85 1/2 86 86 1/2 87 87 1/2 88 88 1/2 89 89 1/2 90 90 1/2 91 91 1/2 92 92 1/2 93 93 1/2 94 94 1/2 95 95 1/2 96 96 1/2 97 97 1/2 98 98 1/2 99 99 1/2 100 100 1/2 101 101 1/2 102 102 1/2 103 103 1/2 104 104 1/2 105 105 1/2 106 106 1/2 107 107 1/2 108 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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

A CENTURY OF PROGRESS.

THE passing of another century is an event of no ordinary import, and we naturally revert to the advance we have made during the period, to the eventful and epoch-making changes that have taken place, and to our duties and responsibilities. Within the hundred years which came to a close last Monday, the arts of architecture and building have undergone many vicissitudes. During that period almost all the great historic styles have passed in succession before us; it has been one of revivals. We have seen Greek, Roman, Romanesque, Gothic of every period, and various phases of the Renaissance, and lastly the revival of the Crafts; and we have witnessed not only the external manifestations of taste, but a few far-reaching inner movements that have considerably modified our ideas of art—first the Romantic movement with all the enthusiasm and romance of the Mediaeval age, and then the influences of such teaching as that of Pugin, of William Morris, of Burges, and Sedding, who linked the revival in architecture with the more profound convictions of men who have laid bare the secrets of the art—inspiration of the historic period. The Pre-Raphaelite movement was in its aim profoundly religious and social, and to William Morris, who began with Mediaeval art on its decorative side, we are indebted for the influence of this movement in our succeeding work, especially as regards the decorative crafts and the rise of craftsmanship as a renewed motive-power in art. We have had in turn the archaeological orantiquarian view of architecture; next the romantic and picturesque period, where we were content to reproduce the quaint forms of Mediaeval and Renaissance building, in which the draughtsmanship ideal became prevalent; the eclectic and practical phase, and now the stage of craftsmanship. These developments have not been without their value to us; but we are not now reviewing the history of architectural progress that is within the memory of many of our readers, but rather the few practical issues that have resulted since the beginning of the century and have so materially advanced our status in art and as citizens of a nation.

About the beginning of the century the practice of measuring and valuing buildings by a surveyor on the basis of a schedule of prices prevailed, and there was little known of general contractors. The contractor system has brought in its course the quantity surveyor and the custom of competition among builders—a movement that has been fraught with consequences more or less prejudicial to architecture as an art. The separate tradesman for each trade which still prevails largely in the North and in France had the great merit of encouraging

the crafts, while the modern plan, with its many facilities and advantages to the architect, has tended to seriously impair the independence of the workman and to undersell his work. Putting a general contractor in the place of separate crafts has chiefly brought about a commercial view of the building and its crafts, besides discouraging individuality. Lately there have been signs of a reaction. Municipal bodies, like the L.C.C., have undertaken their own buildings and dispensed with the contractor, but the venture has not been attended with the result anticipated.

The modern competition system has not only been used for obtaining tenders, but also in procuring designs, and we suppose if we are to designate the 19th century by one term of any general significance, it would probably be "The Competition Era." Many of the great buildings of the century are the result of competition, and this system has also left its influence. Though it has awakened and called out much latent talent, its practice has been discouraging. Improved methods of conducting competitions by the appointment of assessors have removed the reproach in some measure of gross injustice and scandals, and the revised form of the Institute will be of advantage; but on the whole competition has encouraged the art of tricky drawing and cheap building. The latest public competition—that for the rebuilding of a large portion of the Strand in the Strand-to-Holborn scheme—cannot be declared a success.

Co-operation by associations of skilled and independent artificers is another problem of immediate interest that will in the future have to be considered. Building associations composed of masons, carpenters, plasterers, plumbers, painters, &c., have been proposed both here and in America, and schemes of co-operation by building mechanics have yet to be tried.

The progress made by the profession may be dated from about 1834, for before that painting took the popular lead. Architectural literature was confined to a few books, and these were costly. The Institute of British Architects was a development of the old Architectural Society, and was formed at this time. Sir John Soane was professor of architecture in the Royal Academy, and a highly esteemed member; and Charles Barry was in extensive practice, and his Travellers' Club, built in 1832, remains still an example of his refined Classical taste. C. R. Cockerell, a master of Classic design, had a large and influential practice, and the illustrious Pugin, the author of "Contrasts" and "The Principles," led the band of Gothic revivalists on logical issues. At this period, too, we recall the names of Sir Robert Smirke,

Sir William Tite, and Philip Hardwick. Our readers can fill up the gap from this period to our time. We rather desire to draw a comparison between this early period of the century and that of our day. The profession has advanced by leaps and bounds—not only in popular estimation, but in influence among the other professions. The knowledge necessary for the architect in the "twenties" and "thirties" was of a limited kind. The "Five Orders," the precepts of Vitruvius, Vignola, Palladio, or their works, with a knowledge of drawing, formed the staple of the young architect's education; it is now, however, very much more comprehensive, varied, and complex. In many branches of his art, as in the planning and construction of special buildings, it is exact and scientific, while in a host of subsidiary branches unknown to his predecessors the architect has to be proficient. Could he have foreseen the developments in construction due to the discoveries in chemical science, electricity, engineering, and hygiene that have made it imperative for the architect to extend his scientific course of study, and which discoveries have led to improvements and radical changes that have transformed the whole aspect of building as it was early in the century, it would have astonished him. In many branches of the profession also specialists have taken the place of the general practitioner, as in hospital building, baths and washhouses, schools, and technical institutes.

During the century the changes of architectural style from Classic severity to free Renaissance have exhibited both the weakness of our art instincts and the strength of our resources: the inability to grasp the true principles of architectural growth, as well as the power to assimilate the various materials at our command. The formal Classic style was in vogue when the 19th century began, and characterised the reign of George III. The portico was then fashionable; another type of building was homely, dealing more with interiors than façades, but inspired by a picturesqueness of detail as in many of the old Classic halls and residences in town and country. They displayed the national character for seclusion and comfort. The staircases, halls, ceilings, cornices in wood and plaster were well designed and attractive, though externally the plain brick, often box-like in appearance, is sometimes austere and dull. Since that time every phase of Classic, Renaissance, concurrent with Gothic, has been tried, and the result has been a differentiation or gradual separation which has favoured the Classic and Renaissance types for secular purposes and the Gothic for ecclesiastical work, and this distinction

has been more and more recognised in spite of attempts to create a national style.

The century has also gone through a few revivals of building materials. Stone and stucco, concrete, brick, terracotta, and timberwork have each been tried, and the experience thus gained has been of undoubted advantage in discovering the limitations and aptitudes of each of these materials. Stucco for a long time obscured the use of other building materials, especially brick and terracotta. The revival of brickwork through the writing of Ruskin's "Stones of Venice," and the introduction of examples of brick architecture from North Germany and Lombardy, though at first accompanied by many extravagances as brick tracery and coloured voussoirs, became the means of drawing attention to the craft of the bricklayer, and this has been done more thoroughly since Mr. Norman Shaw and other architects used brickwork in their buildings and domestic residences in the Queen Anne style. Terracotta has also been revived, and our buildings in this material, from the Albert Hall, Science School, Kensington, to the latest work, exhibit a considerable advance in the manufacture of and design in this material. Timber and tile work, too, have had their votaries; the century has revived not only Dutch "Queen Anne," but Tudor building. We have only to scan the volumes of the BUILDING NEWS, from the sixties to the present day, to find the adaptations of various materials; in fact, the revivals of brick, concrete, terracotta, half-timber work, architectural pottery and ceramics, in their many forms, distinguish the latter half of the century, and in this connection the names of Norman Shaw, Burges, Butterfield, Street, and Waterhouse are associated with the brick and terracotta and other revivals of material.

The great progress made in the manufacture of iron and steel, and the introduction of steel for building and engineering purposes, belong to the century which has witnessed the construction of bridges and roofs of unsurpassed lightness and strength, notably the Forth Bridge and the Tower Bridge. The introduction of Bessemer steel, Siemens' open-hearth process, and other processes and varieties of steel, the rolling mill, pneumatic and machine riveting, all belong to the era. Iron girders for buildings were scarcely in existence before the century began; for bridge building only cast iron in the arched rib form was in use. The first cast-iron beam of the recognised section was introduced early in the century, and Eaton Hodgkinson speaks of this form in his treatise as that giving the maximum of strength, and the cotton mills of Manchester were the first buildings in which this beam was used. Fairbairn increased the size of the bottom flange. Hodgkinson's experiments established the proportion of the flanges for cast-iron beams; afterwards wrought-iron plate beams took the place of cast iron. From this time various systems of floor construction began to be introduced. Iron and steel roofs of various types have largely supplanted the old timber truss of the last century. Numerous inventions that have considerably changed the architect's methods have been introduced also: such are the advance in sanitary science, electric lighting, and improvements in decorative pottery. Labour-saving machinery in the conversion of timber and for joinery, stone, and marble cutting and polishing, and in other trades have developed the resources of the architect in a manner quite unexpected 100 years ago.

Three important measures of reform deserve particular notice for their far-reaching effects on our social life. They have also influenced the practical development of architecture. These are the sanitary improvements that have resulted in the Public Health Act, 1875, and the building by-laws, Metropolitan Building Acts, and

the establishment of the Science and Art Department.

The past century has been distinguished for its sanitary measures. In 1844 commissioners were appointed for inquiring into the state of our large towns and populous districts. The evidence then adduced amply proved that zymotic diseases were largely due to bad drainage, water supply, and imperfect ventilation. The sewerage of towns, the disposal of sewage and refuse, surface-water collection, and other matters have all been dealt with by the provisions of the Public Health Act, 1875, an Act which has changed the condition of the towns and country districts of England. Under this Act any urban and rural authority invested by the Local Government Act with the necessary powers could undertake various duties. The by-laws as to nuisances, and as to new streets and buildings, empowered to be made by section 157, have transformed the condition of our towns in many structural matters. Model by-laws in force in various towns have prescribed not only questions of foundations, structure of walls, roofs, and chimneys, drainage, &c., but the minimum height for habitable rooms. Hospitals, workhouses, artisans' dwellings, schools, have now regulations with respect to cubical space and other matters. Various by-laws and restrictions have been introduced under the late London Building Act and other measures in respect of building in the Metropolis.

In the past century we have to chronicle the improved facilities for art instruction. The Government teaching in art may be said to have commenced in 1835, when attention was called to the demand created by our manufacturers for a knowledge of the art of design, so as to keep pace with the instruction given on the Continent. Schools of design were established, first in Somerset House, under the control of the Board of Trade; afterwards a Department of Practical Art was instituted, which in a few years developed into the Science and Art Department, the progress of which has been rapid and of great value to the art student and craftsman by its staff of trained teachers, art collections, and system of examination. Now art schools and classes are established in nearly every town and district. From this beginning, art has been systematised, and lately the technical schools and institutes have extended a similar training to craftsmen and artisans of all ranks. We have yet to wait for the results of this latter training of the hand and eye in manual labour and industries; that it has revolutionised the old system of pupilage there can be no question; but we have a doubt whether it will give us the same artistic class of craftsmen that the old studio produced. The education of the architect has undergone a revolution. Voluntary examinations at the Institute and Society of Architects have been instituted, and the Association has raised the standard of the students' education. Examinations for architects fifty years ago were regarded as chimerical; but the progress made in the technical and constructive branches of the profession has entirely altered this view, and the profession agree that the fundamentals of the art can be learned and examined upon as well as they are acquired in other professions.

In the three principal departments of architecture—secular, ecclesiastical, and domestic—vast strides have been made. Our municipal buildings have exhibited the growth and independence of our great municipalities, scores of new town-halls and offices having been erected since the beginning of the century, in addition to markets, baths and washhouses, prisons, workhouses, institutes, and libraries. The ecclesiastical progress of the century has been equally pronounced, and the extensive restoration of our cathedrals and parish churches, no less than the erection of new churches all

over the land have been unprecedented. The conditions of modern life have completely transformed our dwelling-houses. In the early years of the century the houses of the gentry and nobility were spacious and dignified, but suffered from bad sanitation. The smaller houses were still worse. Now hygienic science has reduced the risks of infection by a system of drainage based on scientific principles; windows have been made larger, chimneys improved in construction, and the means of heating and ventilation, then practically non-existent, have been vastly improved. To these structural conditions steam, gas, and electricity, and the use of lifts and other appliances, have added greatly to the health and comfort of the occupants. The century has also seen the introduction of the small middle-class dwelling and the flat system, the city-office block, the great hotel—all indications of social progress.

SOCIETY OF OIL PAINTERS.

THOUGH very unequal in quality, the exhibition of the Society of Oil Painters in Piccadilly contains a few works of considerable merit, and we have only space here to note the more conspicuous of them. Robert W. Allan, who is always strong and vigorous in handling and colour, sends two or three very pleasing examples of his work. His "Sunset at Moret" is admirable in its tone, and in the management of the light in the grey sky; but his chief picture is in the Central Gallery, "Honfleur Fishing Boats," delightfully fresh in colour and atmospheric in effect. The president, Frank Walton, sends four subjects. In the West Gallery, his landscape "The North Downs" will be noticed for its conscientious study. In the Central Gallery we notice "Abinger Mill" (272), and especially "Holmbury Gorse" (276), a very scholarly study of the golden gorse amidst a wealth of dark russet-toned woodland. Few can paint better the bare traceries of branches and twigs with so much delicacy in their rich autumnal brown. One work has a melancholy interest, because it was the last picture touched by the painter on the vanishing day before his sudden death. This is "Stanpit Common" (112), by E. W. Wimperis, in his broad style. It is a sketch of common; the one element of human interest is the rustic bridge over which three or four peasants are crossing. The clouds are full of breezy freshness and motion. Edward W. Waite, "The Haunts o' Springs, the Primrose Brae," a wooded landscape with cottages, enlivened by the clusters of primroses, is pleasant in colour, and we must notice also Cyrus Johnson's "Hillside Copse" (17), John Muirhead's "Stonehaven Harbour" (26), Yeend King's "Stopham Bridge" (33), W. H. Margetson's "The Sacred Spaces of the Sea," a solitary maiden strolling leisurely along the sandy shore by the sea—a graceful figure study, luminous and serene; Edwin Hayes', "Ship Signalling for a Pilot" (71), very charming in its freshness and colour of sea; Ernest Parton's "On the Ouse" (98), E. Aubrey Hunt's fresh riverscape "The Bend of the River" (106), Herbert Marshall's warm sunset view of "Haarlem" (91), Leopold Rivers' "Autumn Evening," and Anderson Hague's "Wet Autumn."

A few figure subjects must be mentioned. Hugh Carter's "An Idyll" is pleasing in drawing and colour—a terrace by the sea, bathed in balmy sunlight, and the figures reposeful and poetic. A. Chevallier Tayler, in "A Committee of Taste," shows a dressing-room;—a group of young ladies sitting or reclining on a couch are watching the steps of a young lady dancing; yards of white material and millinery boxes are on the floor—a pleasing piece of *genre* well painted. Edgar Bundy, in "A Bachelor" (20), cleverly

depicts a young gentleman seated in a recess of a balcony watching some winsome-looking ladies passing along the street. Smoking requisites lie on a small table before the window. The furtive glances of the maidens and the amused face of the young man with a nonchalant air are amusing. No. 52, "A London Fantasy," is a gracefully drawn piece of poetic fancy by A. Birkenruth, and Alex. Mann's study of "A Bacchante," in oval frame, is strong and effective in colour. We also notice approvingly the Countess Helena Gleichen's "After Work," a broadly painted landscape with tired horses being led home. John White's village street, "Evening at the Well," is not without pathos. "The Fountain" (77), by Geo. Spencer Watson, exhibits some skill in the modelling of the un-draped figure. "Bairnies, Cuddle Doon" (81), by R. Gemmell-Hutchison, is delightfully painted—three children being covered up in bed by the mother. The waning light and reflection are skilfully handled. Other works of *genre* worth noticing are by Oscar Wilson (89), a pretty woman in the stocks; Robert Noble's "Pleasures are Like Poppies Spread" (124); St. Geo. Hare's "Going to Reign," a fascinating brunette in large feathered bonnet clad in white fur, with heliotrope bow and strings; and A. Chevallier Tayler's clever episode of Charles I.'s period, "No Fool Like an Old Fool" (139).

A few clever figure subjects are to be seen in the Central Gallery. Mortimer Menpes' "Dorothy" is a clever reminiscence of childhood (143). Miss Janet Archer's "Rosemary," a pleasing study of a girl's head resting on a pillow; and Arthur Hacker, in "The Pool" (147), has a barely-finished sketch of a nude maiden sitting with her foot in the pool, vigorous and strong;—the pink and blue streaks of the brush produce an effective harmony. E. Reginald Framp-ton's studies of saints—St. Catherine, St. Agnes—show much reverential feeling and Mediaeval treatment, and are chiefly decorative. F. D. Millet in "The Fireside" (165), a young woman seated by an old-fashioned fireplace, is pleasing and reminiscent of Brittany; and his "Girl Reading" (280) is full of tenderness and soft expression. The cool grey tones and accessories are characteristic of the painter. Miss Elora M. Reid paints one of her dainty little French stall pieces, full of colour, "A Word of Comfort" (174). There is a good portrait by S. Melton Fisher, the V.P. of "Mrs. Rennell Rodd." "Odalisque," by Felix Moscheles (187), is a clever study of a dark girl's head on a golden background. Walter Osborne has a pleasing study of children, "Under the Trees" (191). W. Lee Hankey sends one of his impressions of Normandy fisher-folk—a young mother nursing her child, with a dim lighted cottage background. "The Peaceful Hour" (194), delightful in its harmony of grey tones. Miss Lily Defries has "A Peasant Baby" (200); Cyrus Johnson's "An Inn Yard" is interesting; Guy Edward Brown-Morison's "A Duet" is pleasing in its harmony and study of light and shade—two girls at the piano singing, full of tenderness (216); S. Melton Fisher's study of a pretty girl in low blue dress, with rose in her bosom (222), is very delicate. "The Bookseller's Daughter" (230), by W. Douglas Almond, is clever in drawing; and we must notice Byam Shaw's weird moonlit subject, "The Kelpie" (243); T. Austen Brown's clever piece of impressionism of night effect, "Burning Weeds" (247); T. B. Kenning-ton's ideal figure-subject, "Autumn," rich in colour (253). J. C. Dollman's "Fox and Peasant," is admirable in the characters of the huntsman and gamester seated outside an inn (256), and the clever piece of *genre*, "A Doubtful Hand" (286), by Edgar Bundy, deserves notice. The two Cavaliers playing whist in an inn parlour are cleverly drawn in the details. Amongst the best landscapes we may men-

tion Alfred Wither's "The Riverside, Kew" (155), charming in its colour. H. Fantin-Latour's "La Nuit" (169), Anderson Hague's "Barley Field," broad in its effect, and grey sea and sky; W. A. Breakspere's "Summer Seas" (186); Vincent P. Yglesias's "Gorleston Pier," admirable in its rough sea and grey sky (233); John R. Reid's "Harvest of the Sea" (294), strong in colour; and works by Ernest Parton (312), and Val Davis (309).

In the East Gallery, W. H. Margetson has a refined figure study (319) "For Remembrance." Dudley Hardy's "Solitude" (341) is a fine piece of impressionism in an old-looking frame. Quaint and clever is Miss L. Johnson's "Under the Bridge." Cecil Rea (332) has a well-composed decorative scheme in low colour, "Groves Elysian." T. B. Kennington, in "Light and Shade"—a little boy in cricketing dress, and a girl, her face in shadow, at an open window facing a sunlit meadow—is clever, but somewhat mannered in style. E. Hayes, R.H.A., has a fine seascape, "Trawlers in Dublin Bay," the sea partly lighted up by gleams of sunlight through clouds. Equally clever in sunlight and cloud painting and atmosphere is Claude Hayes' large common, "The Uncertain Glories of an April Day—Witley Common" (374). Rembrandt-like in its chiaroscuro effect is Robert Noble's large picture, "Sunshine and Shade" (377), an interior of a country-house parlour, the figures of children playing with kitten, and the parents buried in deep shade, intensified by the sunlight which comes in through an open door. Dudley Hardy's large landscape, "Silence" (398), has strength in its expanse of grey mist over the unbroken solitude. We also admire Julius Olsson's "Moonrise and Afterglow" (388), the touching pathos in Geo. W. Joy's "Dreams on the Veldt" (391), and landscapes by Richard Guy Somerset (406); J. Coutts Michie's "Close of a Summer's Day" (407); J. Muirhead's "The Coming Storm" (420); Arthur Severn's "Sunset over Coniston Lake" (439); J. Nettleship's appealing and powerful picture, "The Battle Call" (436). Fred G. Cotman's large sunlight landscape, "Rievaulx" (453), is very charming; and we must also notice the remarkable picture, "To Feed Them in the Time of Dearth: Suggested by Kipling's 'William the Conqueror'" (484), by Frank W. W. Topham. The study of a girl's head by Henry J. Stock; "The Yellow Rose" (457); and works by Alfred Hartley (468), and F. Stuart Richardson's fresh seascape (490) call for notice.

Application has been made at Norwich Consistory Court for permission to take a portion of St. Andrew's Churchyard in that city for street widening purposes, and to erect a new wall and railings. The application was adjourned to Chambers.

A large block of engineering works has been erected at Southtown, Great Yarmouth, for Messrs. W. F. Crabtree and Co. The works occupy a site of 3½ acres, extending from the river on one side to Southdown-road on the other, which was formerly a shipyard. The premises have a frontage of 200ft. and a depth of 700ft., and are built of constructional ironwork on concrete walls and foundations, the exterior being of corrugated iron, painted a dull red, pierced with a long series of windows. Over 200 tons of these galvanised iron sheets and girder framework were used in erecting the building, which has a concrete floor raised 2ft. 6in. above the highest tide known.

A memorial reredos and sedilia, which have been placed in St. Margaret's Church, Olton, Warwickshire, were dedicated on Sunday by the Bishop of Coventry. The reredos has been erected in alabaster, and extends the whole of the width of the chancel, returning upon the north and south walls about 4ft. The design is Geometrical Gothic. The centre is finished with three ogee canopied arches, with crockets and finials on top. Panels are formed in the three arched recesses, and in the centre panel is fixed a cross, and on the two side ones ministering angels in white alabaster. The step and floor to the Communion table are of Devonshire marble. The oak sedilia is placed on the south side of the sacristy. The work has been executed by Mr. Robert Bridgeman, of Lichfield, from designs by Mr. B. Corser, of Birmingham.

OBITUARY.

WE regret to announce the decease of Mr. HENRY COWELL BOYES, F.R.I.B.A., surveyor to the Grocers' Company, and a past-president of the London Architectural Association. Mr. Boyes, who died on Dec. 26, at his residence, Fir Cottage, Weybridge, and was buried at Brookwood Cemetery, Woking, on Saturday, was 54 years of age. He was articled to the late Mr. Francis Chambers, of College Hill, E.C., and afterwards commenced practice on his own account at Grocers'-court, E.C. He has acted as surveyor to the Grocers' Company for the last fifteen years, and for them he has carried out some important works, including their new hall and offices in Princes'-street; swimming-bath and gymnasium, &c., at the Company's school on Hackney Downs; and also two boarding-houses and additional classrooms at the schools at Oundle, where some £17,000 was expended under his supervision. Mr. Boyes's work at Grocers' Hall was illustrated, from specially-taken photographs, in the BUILDING NEWS for Jan. 25, March 22, and Aug. 2, 1895; April 17 and Oct. 9, 1896; and Jan. 22, 1897; and these well evidence the quiet taste and freedom from pretentiousness characterising the productions of his pencil. The deceased gentleman was also the surveyor to the Girdlers' Company and the Holborn Estate Trust. His private works included numerous blocks of warehouses and offices in the City; Messrs. Seeley's publishing offices in Essex-street, Strand; a house for Mr. Mocatta at Englefield Green, a new church at Homerton, and banking premises on Cornhill, E.C. In 1876, having already served on the committee, and as vice-president, Mr. Boyes was elected President of the London Architectural Association, and in view of his herculean frame and unusual stature, about 6ft. 4in., it was aptly remarked by the late Mr. Bowes A. Paice, in proposing a vote of thanks to him at the close of his year of office, that the presidential chair had never been, and probably never would be, better filled. He joined the R.I.B.A. as an Associate in 1874 and became a Fellow eight years later. Mr. Boyes took a warm interest in the London Rifle Brigade, of which he was the senior major at the time of his death, and with which he had been associated since 1864. He received his first commission as lieutenant on June 1, 1873, and less than four years later, on May 23, 1877, he was promoted to captain, remaining in command of his company for more than eighteen years. He was advanced to major on January 15, 1896, and at the same time, for length of service, was accorded the honorary rank of lieutenant-colonel. He had passed in tactics with distinction, and held the Volunteer decoration. The lieutenant-colonel was a frequent visitor to the German and French manoeuvres, and was regarded as an authority on military matters generally, being a prominent member of the Royal United Service Institution. He acted as the honorary architect for the erection of the Brigade Drill Hall in Bunhill-row in 1893. We published a portrait of Mr. Boyes in our issue of March 21, 1890.

MR. EDMUND M. WIMPERIS, Vice-President of the Royal Institute of Painters in Water-Colours, died suddenly on Christmas Day, at Southbourne, near Christchurch, Hants. Mr. Wimperis was the son of the late Mr. Wimperis, manager of lead works at Chester, and was born in 1835. He came to London in early life, and was trained for the art of wood-engraving under the influence of Mr. Birket Foster, and in company with the late Mr. William Palmer. But drawing for the wood was elbowed out by more speedy processes, and Mr. Wimperis turned to water-colour drawing in landscape work. When he had secured his recognised place in water-colours he went on to paint in oils as well, with the result that his themes were larger and the pictures scarcely less successful. Some years since he succeeded Mr. Haag as vice-president of the Royal Institute of Water-Colour Painters, and was an active member of the Artists' Benevolent Fund.

MAJOR-GEN. S. C. TURNER, Director-General of Military Works, died at Bombay on Monday. Major-General Turner obtained his first commission in the corps of Royal Engineers in 1866, and began his long period of service in India in 1868, acting as assistant, and five years afterwards as executive engineer to the Public Works Department in Bombay. His services to the Mahsud-Waziri expedition in 1881, at which he was present, were mentioned in the despatches, and in

1895 he became chief engineer of military works in India. In 1899 he received the higher appointment of Director-General of Military Works in India, with the rank of Major-General.

DR. WILLIAM POLE, F.R.S., the eminent civil engineer and musical amateur, died suddenly on Sunday at his residence, 9, Stanhope-place, Hyde Park, W., in the 57th year of his age. He was educated for a civil engineer, and, after following his profession in this country for some years, he was in 1844 appointed by the old East India Company Professor of Civil Engineering in Elphinstone College, Bombay. In 1847 he returned to England, where he devoted his attention to the mechanical branch of his profession. In the provision of the materials and stock for the great railway undertakings in India then under construction he took an active part, and between 1859 and 1867 was Professor of Civil Engineering at University College, London, and lecturer at the Royal Engineer Establishment at Chatham. He was frequently intrusted by the Government with important investigations and inquiries.

CHIPS.

Messrs. Hudson and Kearns supplement their samples of blotting-pad diaries and desk remembrancers, which we have already noticed, by their usual excellent Architects' and Builders' Diaries for 1901, which are distinguished by all the care and completeness which have for so many years made them indispensable.

An inquiry was held at Liverpool yesterday (Thursday) with reference to the application of the city council for a Provisional Order to amend the Liverpool Sanitary Amendment Act, 1864, as amended by certain local Acts and Provisional Orders, enabling the council to borrow a further sum of £200,000.

Mr. Rienzi Walton, M.Inst.C.E., one of the inspectors under the Local Government Board, died suddenly on Saturday last at his residence in Warwick-road, S.W., aged 57 years.

At the annual meeting of Aberdeen City and District Lunacy Board held on Friday, the sites and buildings committee reported that twenty-one estimates for the mason work of the new asylum at Kingseat had been received, and they recommended that the tender of Mr. Edgar Gauld, amounting to £26,983, be accepted. This was agreed to. It was stated, in course of discussion, that the total cost of the building would amount to between £70,000 and £80,000. Operations are to be commenced forthwith.

It has been found necessary to postpone the opening of the Exhibition of Modern Illustration in the Indian Section (Imperial Institute-road) of the Victoria and Albert Museum until Monday week, the 14th inst. The exhibition will be open free every day—on Mondays, Tuesdays, and Saturdays from ten a.m. till ten p.m.; on Wednesdays, Thursdays, and Fridays from ten a.m. till four p.m.; and on Sundays from two p.m. till dusk. The exhibition will remain open about three months.

Mr. J. Passmore Edwards has offered to present to Newton Abbot a free library as a memorial to his mother, who was born there.

Through the energy of the vicar of Horsham, a new church was consecrated on Tuesday in last week by the Bishop of Chichester for the Holy Trinity district. The cost of the new church, apart from the site and furnishing, was £2,699. The style is Early English, and the architect is Mr. W. Gillbee Scott, of Bedford-row. The church will seat 448 persons, but future extension is provided for by means of transepts. The centre light of the east window is of stained glass.

The engineer and chief superintendent of the bathing establishments of the Liverpool Corporation (Mr. W. R. Court) has been instructed by the baths committee of the city council to prepare preliminary plans for the erection of baths on the Lister-drive site, a cost not exceeding £24,000.

Hayward Brothers and Eckstein, Ltd., Union Works, Union-street, Borough, London, S.E., have just opened a branch office and showrooms at 63, Mosley-street, Manchester, for the convenience of their Lancashire, Cheshire, and Midland customers. A member of their London staff will be in constant attendance at that address to answer inquiries and give estimates.

The death has taken place at Boston, Lincolnshire, of Mr. James Lancaster, in his 88th year. Deceased was for many years engineer to the Black Sluice Drainage Commissioners, and other similar bodies in the county.

Messrs. E. H. Shorland and Brother, of Manchester, have just supplied some of their patent Manchester grates to the Board Schools, Workington.

Engineering Notes.

LEITH.—In 1890 the Caledonian Railway Company obtained powers to extend their system eastwards of Edinburgh, and this line, known as the "Edinburgh, Leith, and Newhaven extension lines," is now being constructed. The work has been divided into two contracts, the first or Bonnington contract being from Newhaven to Pilrig, and the second, known as the Pilrig and Leith Dock contract, running from Pilrig to the docks, via Seafield, and to Bath-street, through the works of the Edinburgh Ropery Company. The existing North British Leith line and the water of Leith, which flows alongside, are crossed by a heavy girder bridge. This girder bridge is in two spans, two stone piers built on the north bank of the Water of Leith, acting as an intermediate support to the structure. Beyond the Water of Leith a masonry viaduct has been erected. The foundations of this viaduct consist of Portland cement concrete laid on the top of pitch-pine creosoted piles, the piers of the viaduct are of masonry backed with concrete, and the arching is of brickwork, the outer face being built with Scottish blue bricks. A girder bridge of 130ft. span carries the line across Bonnington-road. On the west side of Leith-walk a series of arching is being erected at present. This arching is carried on masonry piers, the arches being of brickwork, and the outer face of red terracotta bricks. Between Leith-walk and Halmre-street the railway is carried on a viaduct about 35ft. high, and consisting of some fifteen arches varying in span from 30ft. to 36ft. This viaduct is nearing completion. A girder bridge, which has now been erected, carries the line over Halmre-street. From Halmre-street to Easter-road the railway is carried on another viaduct, similar to that already described. Easter-road is crossed by means of an overhead girder bridge, the span in this case being about 150ft. The abutments for this bridge have been built, and are ready for the steelwork. A branch railway is to be constructed, which will connect the new main line between Craigball-road and Ferry-road and the existing Newhaven and Leith line. The mason work entailed in the contracts was stopped for four months owing to the mason's strike, but is now being pushed ahead. Messrs. William Beattie and Sons, Fountain-bridge, Edinburgh, are the contractors for both sections of the railway, and the amount of the contract is about £150,000.

The opening of the Studdon Bridge which spans the Allen near Allendale Town took place on Saturday. The erection of the bridge and the making of the portion of the new road leading to the bridge was under the superintendence of Mr. W. R. Temperley, road surveyor to the Hexham Rural District Council.

Messrs. Williams Brothers, of the Kileyards, were intrusted with the commission for the stained-glass window in the new Congregational Chapel at Upton. The colouring is quiet, but very effective; the various figures are distinct, the attitudes natural, and the fillings-in of the background and caropies harmonise well with the rest of the work.

The directors of the New Gallery announce that the winter exhibition, consisting of a collection of the works of Sir William B. Richmond, R.A., will be opened to the public on Wednesday next, the 9th inst.

St. George's Church, Ashill, Norfolk, has been enriched by the erection of two stained-glass memorial windows. The east window is in memory of the late Rev. B. Edwards, who was rector of the parish 76 years, and lived to within 26 days of 100 years. This window consists of three lights, with two subjects in each. In the centre is represented the Crucifixion, and beneath Abraham offering up his son Isaac. In the right-hand light is represented the arisen Lord and the Holy Women, and beneath the Prophet Jonah returning thanks on the seashore after his three days in the whale's belly. In the left-hand light is represented the Nunc Dimittis, the purification of the Virgin Mary, and the presentation of the Infant Christ in the Temple. Beneath is shown the Old Testament type Eli instructing Samuel. The other window, erected to the memory of the late rector, the Rev. C. W. N. Custance, is on the south side of the chancel. It consists of two lights, but only one subject—Our Lord charging St. Peter. The new stonework in the windows is by Messrs. Cornish and Gaymer, of North Walsham; and the glass by Messrs. Lavers and Westlake, of London. Mr. A. Reeve was the architect of the stonework.

COMPETITIONS.

PRESBYTERIAN ASSEMBLY HALL, BELFAST.—The following letter has been addressed by the Council of the R.I.B.A. to the Belfast Presbyterian Assembly:—"The Council of the Royal Institute have had their attention directed to the competition for the proposed new Presbyterian Assembly Hall, Belfast, and have carefully considered the whole question. In view of the unsatisfactory termination of this competition, and especially in view of the appointment as architect for this building of the firm responsible for the original objectionable conditions, the Council are of opinion that the only proper course to have been adopted was either to have appointed Mr. Rupert Savage as architect in conjunction with a consulting architect as suggested by himself, or to have inaugurated a new competition with conditions drawn up by an experienced assessor. My Council hope that the assembly's committee may yet see their way to adopt one of these courses.—Yours faithfully, W. J. LOCKE, Secretary."

The death occurred at Cannes, on Tuesday, at the age of 59, of M. Paul Lianard, who executed the statue of Lord Brougham in that town.

Mr. Richard William Binns, F.S.A., died at Worcester on Friday, aged 81. Mr. Binns, who was born in Dublin, became a partner in the Worcester Porcelain Works in 1851, and art director at a later period, and greatly improved the quality and fame of the Worcester china.

A proposal is on foot to apply to the Light Railway Commissioners for an order to construct a line from the Southam-road Station on the Great Western Railway to Willoughby Station on the Great Central Railway. The proposed line will pass through Harbury, Ladbroke, Southam, Napton, Grandborough, Shuckburgh, Wolfhampcote, to Willoughby. The probable cost of the line will be about £5,000 a mile, and the distance to be traversed is about ten miles.

The Bishop of Coventry conducted a service at Exhall (near Nuneaton) parish church last week, in connection with the rededication of the bells and the restoration of the belfry. The bells having been in use since 1706, it was discovered on the restoration of the church some years ago that the belfry was unsafe and the bells imperfect. The work has been carried out by Messrs. Barwell Brothers, of Birmingham, at a cost of about £180.

The memorial at Saltash to the late General Sir W. Penn Symonds is to take the form of a monument of Cornish granite, surmounted by a crown, gilded, and having a bronze panel with bust on one side, and another, also of bronze, with inscription, on the other side. The monument will be about 25ft. high, and will be erected in the Victoria Gardens, the most prominent site in the town. The design is by Mr. A. S. Parker, A.R.I.B.A.

While working near the Island of Cerigo, the ancient Cythera, divers have found some bronze statues of colossal size, marble statues, and other relics of ancient art, which appear to have lain at the bottom of the sea for many centuries. Most of the articles brought to the surface are a good deal damaged by the water; but a hand and head in bronze are sufficiently well preserved to indicate that they are of Greek workmanship, though their origin is unknown.

The Late 14th-Century parish church of St. Gregory Seaton, Devon, was opened last week after restoration and art, from plans by Mr. G. C. Strawberry, M.S.A., of Taunton. Mr. H. Abbott, of Seaton, was the builder. The works comprise substitution of an open-timbered roof with crisply carved wood bosses at the intersections in place of a lath-and-plaster ceiling, whilst the walls throughout have been overhauled and ornamented by colour. There are new clergy prayer-desks of oak, and a new pulpit of carved oak has been set up on the north side. This has been carried out by Messrs. Harry Hems and Sons, the well-known church furnishers, of Exeter, who are also making the new font which is not yet fixed. The bowl of this font is of Bære stone, and will be carved upon each of its eight faces, and it will stand upon alabaster columns resting upon a double row of octagonal steps.

The South Shields School Board are at present enlarging several of their schools. They have in course of erection a junior mixed department and a senior mixed for the Mortimer-road school to accommodate 600 scholars in each department. The expenditure will be £18,000. A new mixed school is being added to the Westoe-road higher grade school to accommodate 680, and the cost is estimated at £17,700. The Baring-street infants' school will be improved by the extension of classrooms, &c. The total number of new places provided by these operations will be 2,226.

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ILLUSTRATIONS.

"THE VIRGIN AND CHILD ENTHRONED."—A ROMAN SENATOR SEATED.—GIOTTO'S CAMPANILE AT FLORENCE.—GORLITZ TOWN HALL.—THE NEUSTÄDTER THOR, TANGERMÜNDE.—NEW STATION, SAN PAULO RAILWAY, BRAZIL.—THE TOWER OF MANSION AT PANGBOURNE.—MR. KOERMAN SHAW'S LIBRARY.—CARTWRIGHT MEMORIAL HALL, BRADFORD.—PORAL OF THE CHURCH OF ST. GILLES.

Our Illustrations.

"THE VIRGIN AND CHILD ENTHRONED," BY ANDREA MANTEGNA.

THIS picture belonged to the famous collection of Cardinal Cesare Monti, Archbishop of Milan from 1632 to 1650, and was placed by him in the private chapel of the Palazzo Monti as early, it is said, as 1610. After the death of this prelate the painting long remained with the Monti family, but after their extinction during the 18th century, when the property became possessed by the Andreani family, the picture was taken out of the chapel and placed in one of the other apartments. Signor Baslini purchased it from one of the representatives of the Andreani property, and again the masterpiece changed hands, passing into the possession of Signor Roverselli, who sold it in 1855 to the National Gallery, where it is now to be seen in the Paduan Room (No. VIII). It may be interesting to allude to the fact that Cardinal Monti bequeathed the principal part of his collection to his successors in office, and that a considerable portion of his paintings have found a permanent home in the Brera Gallery. The picture is executed in tempera on canvass 4ft. 6in. in height, by 3ft. 9in. wide. The Virgin is seated with the child standing on her knee, on a low throne surrounded by a tester canopy. On the right of Our Lady is St. John the Baptist, and on her left the Magdalen, both standing. The background consists chiefly of orange and citron trees. On the scroll attached to the prophet's cross is written "Behold the Lamb of God which taketh away the sins of the world," in Latin, from John i. 29, and on the inner side of the scroll above is the painter's signature, Andreas Mantinia, C.P.F. (Civis Patavinus Fecit). This great master was born in 1431, and he died at Mantua on the 13 September, 1506. His father was Biagio, of Padua, and he became a pupil of Francesco Squarcione, who adopted him as a son as well as his pupil. In the studio of his master Andrea met Niccolò Pizzolo, and so great was his progress that almost when still a boy, Andrea practised his art independently, and became in early manhood associated with Jacopo Bellini, whose daughter, Nicolosa, he married. Mantegna's work in the chapel vaulting and choir walls in the church of the Eremitani at Padua have been copied by the Arundel Society, and are too well known to need description. They occupied the painter's time from 1454 to 1459. His magnificent altar-piece of St. Zeno at Verona was executed about this time. Some three years before the Marquis of Mantua, Lodovico Gonzaga endeavoured to attract Mantegna to his capital by making him liberal offers, but without result, though the artist did some works for the prince in 1463. Of his work in Mantua little now remains. During the years 1488 to 1490 Andrea was at work for Pope Innocent VIII. in Rome decorating the chapel of the Belvedere, a part of the Vatican since demolished. Mantegna, regarded from a more purely technical point of view, was a master of the highest order. His conceptions are noble

and his forms are correct, while his colouring is possessed of a harmony that more than satisfies the eye. "Drapery he treated as a means of displaying the figure. This peculiarity he derived from an almost too exclusive study of ancient sculpture. Yet so thoroughly does it accord with his whole style that none would willingly miss a single fold which the master thought worthy of almost infinite care." The other examples of his skill in the National Gallery are "The Triumph of Scipio," "Summer and Autumn," and "Samson and Delilah."

"A ROMAN SENATOR SEATED": ROYAL ACADEMY PRIZE CARTOON FOR A DRAINED FIGURE.

THERE is nothing to add to what we said about Mr. Fred. Appleyard's powerful cartoon, when we noticed the recent exhibition of Royal Academy Prize works at Burlington House in the BUILDING NEWS for December 14 last. Its strength of drawing and grace of form are evident, and the excellence of the artist's touch is admirably reproduced in the photo-lithograph plate included among our illustrations to-day.

GIOTTO'S CAMPANILE, FLORENCE.

THE etching which Mr. Wallace Rimington, R.P.E., has kindly contributed to our pages this week is reproduced by permission of the Fine Art Society. It represents the famous tower which Giotto added to the church of Santa Maria del Fiore at Florence—a monument too well known to need description. It is truly the most brilliant and beautiful structure of its kind in the world. Rising perpendicularly without basement, plinth, or buttress to the height of 276ft., it gleams with the sparkle of mosaic incrustations from top to bottom, while the base is elaborated by a rich series of sculpture, Giotto contributing a girdle of tablets representing the history of civilisation which is marked by Human Labour, Religion, and the Arts and Sciences. Andrea Pisano added a second row emblematic of the Virtues, Works of Mercy, the Beatitudes and Sacraments. In niches above these belts of reliefs are statues of saints and famous men by later artists. The Campanile was commenced in 1334, under a decree of the Signoria that it should surpass all other towers, ancient or modern.

THE COURTYARD ENTRANCE, GORLITZ TOWN HALL.

THERE is a pleasing mixture of differing styles in this interesting building which generally adds a piquancy to an historic example of architectural art, though if such a combination should be embodied in a modern work the incongruity becomes at once self-evident. An abstract principle thus stated is recognised as a truism, no doubt; but it is equally certain that some architects, in their endeavour to produce a striking result or in the hope of evolving some degree of originality after a ready-made manner, have produced buildings of a type conspicuous chiefly for their divergent details, culled, like a patchwork, from various sources. The example which has been selected for the accompanying illustration is mainly deserving of study for a different reason, and no doubt to various tastes other suggestive ideas will be evolved. It would be easy to find fault with the treatment adopted over the arched doorway shown in the sketch, and, like most work of the German Renaissance, it may be somewhat lacking in refinement of detail; but for all that there is a very happy notion illustrated in the recessing of the pilastered jambs of the portal and the window above, the latter being made to form part of the composition which is ingeniously self-contained, and so far satisfactorily set, as it were, within a mass of rusticated masonry amidst which it is adroitly introduced without loss of scale. The municipal pulpit or balcony adjoining the entrance groups very prettily with the boldly contrived staircase, so that the whole effect is distinctly pleasing as well as original. The figure of Justice standing with her sword aloft gives a finish without over-weighting the composition. Of the Prussian town of Görlitz, which is reached by the line between Dresden and Breslau, it may be said that the place is chiefly notable for its massively designed and substantial houses, with arcades below them, and the inner town comprises large squares and spacious streets. A wall of some antiquity surrounds the central part of the city, which is entered by eleven different gates, and it stands on a picturesque eminence high above the banks of the river Neisse. It is

possessed of several churches, one among the number ranking with the largest ecclesiastical buildings of its class in the country. Its crypt is hewn out of the solid rock on which the sacred building rises, and this curious feature adds much to the remarkable character of the church. We are indebted to Herr Ernst Wasmuth, of Berlin, for this subject, which is taken from his valuable publication "Denkmäler Deutscher Renaissance," a useful folio for any architect's office, and containing a great variety of examples of differing dates included within the above comprehensive title.

THE NEUSTÄDTER THOR, TANGERMÜNDE, GERMANY.

TANGERMÜNDE, some seven miles towards the south-east of Stendal, stands high above the banks of the Elbe, at the confluence of the Tanger. It is a very ancient city of about five thousand inhabitants, and is chiefly remarkable for its historic and richly-decorated brick Rathhaus and elegant portal to St. Stephen's Church. The towers of both buildings form conspicuous features in the outline of the town, with its quaint streets and old-world air of antiquity. The first Margraves of Brandenburg resided in Tangermünde. The whole of the towns north of Berlin, taking a line east and west up to the Baltic and North Sea and in Denmark, are remarkable for their brick buildings, dating from the Middle Ages, and their style appears to have originated and gradually become elaborated to accommodate the use of brickwork both for ecclesiastical buildings as well as houses and civic undertakings. The great feature of these works, as in the towers at Tangermünde, is the display which the designers made in patterning and moulding their bricks, never hesitating to repeat their patterns, and yet freely diversifying with ingenious inventiveness the capabilities of the material, using for the most part wide joints, which are always in white mortar struck with a full ¼ in. joint. A glazed surface, too, is used, which, as the modern use of that material sometimes shows, must have given a startling effect, and it may be questionable whether glazed and unglazed brickwork, used alternating or in patterns, ever can be wholly satisfactory—at any rate, till a good part of the glazed finish has worn away, by which time the weather has more than often eaten into the unglazed bricks to a far greater extent, leaving the vitrified surface of the others in undue prominence. Whether these old brick buildings had their ornament carved before the bricks were burnt or afterwards is a moot point. The jambs and tracery of the windows in these old German buildings are moulded with mullions, often carried up to immense heights without support, except that given by the glazing tie-bars. Flemish bond is generally the rule. The large plaster couche shields may have had arms emblazoned on them. Guard towers with surrounding outlook pents, such as this Neustädter Thor once possessed, are not uncommon, the gallery running round with corbels and strutting timbers. Such-like erections are to be seen at Anklam, where the Stein Thor may be mentioned, and others could be quoted from Pomerania, where the brickwork is particularly rich and interesting. The modern brick churches designed by Herr Otzen, though in a way clever, are hard and mechanical-looking, an effect which time may, of course, modify to some extent.

RAILWAY STATION AT SAN PAULO, BRAZIL.

THIS new station was recently designed for the Santo Paulo Railway Company of Brazil by the late Mr. Charles H. Driver, F.R.I.B.A., of Westminster and Clapham. No particulars of the building have come to hand.

"THE TOWERING HOUSE," PANGBOURNE.

THE illustration comprises that part of the mansion at Pangbourne showing the tower and principal entrance. The house was erected for the late Mr. John Donaldson, and the tower is intended to replace a smaller one which was originally on the site, and which gave its name to the place. A certain amount of Scotch feeling has been imparted to the tower, in deference to its owner, and there is a fine look-out over the beautiful surroundings from its summit. The materials used are red brick and stone, and the builders were Messrs. Foster and Dicksee. The carving was executed by Messrs. Farmer and Brindley. The architect is Mr. John Belcher, A.R.A.

THE LIBRARY: MR. NORMAN SHAW'S HOUSE,
HAMPSHIRE.

ALTHOUGH some years ago* we gave an exterior view of the interesting house which Mr. Norman Shaw erected for himself in Ellerdale-road at Hampstead, it has not before, so far as we are aware, been illustrated by interior views and a plan as herewith reproduced. On the presumption, probably, that "they do these things better in Germany," the subject has been reserved by the architect for publication in a delightfully-produced publication just issued in Leipzig by the enterprising firm of Messrs. Cosmos and Co., publishers, brought out under the editorship of Mr. Hermann Muthesius, a large folio work of photographs of buildings in England, from the designs of Messrs. Norman Shaw, R.A., George and Peto, Nesfield, E. R. Robson, E. W. Mountford, T. E. Collcutt, Honeyman and Keppie, H. T. Hare, John Douglas, and other well-known architects. The same sort of thing has been done already by other German publishers, but never before with greater skill or in a more admirably-finished style, for the collotypes, speaking from those which form the first part of this work, are in every way excellent, even if we feel that some of the subjects chosen might have given place with advantage to a selection of more typical examples. A description accompanies the pictures, describing in appreciative terms the

bay window or oriel. The exterior is in red brick, and now that time has made its mark and nature has added creeping plants, the building has gained a further charm. It can never lose its individuality, and its interest will always be associated with the occupation of its designer. We shall hope to see other good examples of moderately-sized contemporary English houses equally well illustrated, and while no work of the kind can be complete without illustrations of the Imperial Institute and other public works in London, such buildings are already familiar more or less to the architectural subscriber, whereas drawings and photographs of internal parts of some of the best modern residences are not so readily accessible, and are certainly more difficult to obtain. Mere upholstery, of course, is not wanted. Cabinet work is in its way charming enough, but good typical specimens of architecturally-treated houses in which the plan combines with the section to produce an economical as well as convenient and artistic whole will always be permanently appreciated, and it is to this class of house that Mr. Norman Shaw's own dwelling belongs. No one has done more to improve modern houses than he has accomplished, and if only a geometrical section of this example of his skill had been added to the photographs, it would have filled a void now felt in comparing the pictures with the plan. Some similar illustrations of some of Mr. Philip Webb's houses would be welcomed, and a specimen or two by Mr. Bentley. We shall look for subsequent parts of "Die Englische Baukunst der Gegenwart." Messrs. Cosmos, of Leipzig and Berlin, ought to secure a large number of subscribers both at home and abroad. They will do well to be critical as to what they include in the forthcoming parts for the reasons already sufficiently indicated.

CARTWRIGHT MEMORIAL HALL.

THIS building, now in course of erection from the designs of Mr. John B. Simpson, stands on a fine site in the park, and will make a grand addition to the public buildings at Bradford. The exterior is being carried out in the excellent local stone from neighbouring quarries, and the interior in picked Monk's Park stone. The joinery throughout will be in polished hardwood, and the floors in wainscot oak. The contracts amount to £52,000. Mr. William Farnish has taken the excavating, bricklaying, and mason's work, Mr. Pick the carpenter and joiner's work, H. Braithwaite and Co. the plumbing, Hill and Nelson the slating, the plasterer's work is by J. Cordingley and Son, and R. H. Dewhurst the founder and smith's contracts. We give a plan of the principal floor, and the elevations and other geometrical drawings will be found illustrated in the BUILDING NEWS for June 9, 1899, when the design was chosen in competition on the advice of Mr. Alfred Waterhouse, R.A., the assessor. As will be seen from Mr. Simpson's drawing, sculpture will enter largely into the composition of the building, and its architecturally conceived plan will, no doubt, produce a dignified and suitable interior. The staircases and hall form fine features, and go far to add to the interest of the scheme.

PORTAL OF ST. GILLES, PROVENCE, FRANCE.

THIS world-famed portal forms part of the fragment which now stands as a record of the chief priory of the Knights of St. John of Jerusalem, not far to the west from Arles, on the branch of the Rhone. St. Egidius, better known as St. Gilles, founded the abbey in the sixth century, and the place soon became a town of much importance. The crusades of the northern Franks against the Albigenses of the south formed a sort of sequel to the barbarian onslaughts of the heathen of former times. The bloody wars and devastating campaigns, inspired by the attractions provided by the richer provinces of the south, naturally led to the sacking of towns and the ruin of buildings throughout the country in all directions in Aquitaine and Languedoc. St. Gilles shared the fate of many another sanctuary. The church was in all likelihood never really completed, owing possibly to the troublesome times connected with its history. It was designed on a fine and worthy scale, however, and was started by Alphonse Jordain, of Toulouse, early in the 12th century. The crypt-like lower church forming the substructure of the once proposed vast building above gives a good idea of what the architect intended, but the existing small later church belongs to the period of the town's decline, and with a temporary character presents little of architectural merit, a striking contrast

to the magnificent façade of the great portals of which we give a drawing to-day by Mr. W. Campbell. There is no richer or more beautiful specimen of Provençal design than this frontispiece, and, like the porch of St. Trophime, its neighbour at Arles, every part of the composition is adorned with splendid sculptures and carvings, all of which fittingly emphasise the architectural lines of the design, to which they are becomingly subordinated. Vast dignity is obtained by the wide flight of steps leading up to this masterpiece of Romanesque art, in which a Byzantine influence is distinctly evidenced in the draperies of the figure work. Scriptural subjects are continued along the frieze, with its enriched architrave and broken cornices, which occurs between the arches of the doorways. Crouching lions support the columns to the openings, and in the mural niches, formed by a series of pilasters, are large statues of the Apostles treated with Roman dignity, while the same style is observable in the egg and bead ornament and leaf foliations of the arch moulds, pedestals, and other features interspaced with carvings of beasts and grotesques, after the Romanesque manner in the modillions. The capitals to the shafts are copied from Corinthian models, and one column alone is fluted. The usual arrangement of the Majesty, surrounded by the Evangelistic beasts, occupies the central tympanum. The south doorway is surmounted by a representation of the death of Christ, while the Blessed Virgin and Child occupies the corresponding position of the north portal, supported by the Magi and good shepherds. Mr. David Macgibbon, in his "Architecture of the Riviera," says that this great work was probably completed before the breaking out of the Albigensian conflict about 1150. Syrian models, he suggests, had considerable influence in the architecture of Provence, and it is to the connection of the Crusaders with the East that much of the art expressed in the portals of St. Gilles and Arles may be said to be due. Apart from this, no doubt Roman examples were adhered to throughout the district, and instances abound of the Romanesque spirit which pervaded it before and during the 12th century. We are indebted to the *American Architect* for the loan of Mr. Campbell's drawing, which is characteristically executed in pen and ink.

CHIPS.

The dissolution is announced of the partnership heretofore subsisting between Franklin Cross and H. B. Brookes, architects, surveyors, and estate agents, Birmingham, under the style of Franklin Cross and Brookes; as also of that between F. W. Croft and E. E. Bentley, architects and surveyors, Great Grimsby, under the style of Croft and Bentley.

The Burgh Commissioners of Danoon are at present inviting offers for road and other improvement works at the mouth of the Balgie Burn, in connection with the removal of the present bridge and the erection of a new steel bridge 43ft. long (in two spans) and 36ft. wide.

Mr. Harry Hems, Fair Park, Exeter, has received a letter from her Majesty's private secretary, Colonel Sir Arthur Bigge, K.C.B., expressing to him her Majesty's interest in his thirty-second successive annual feast to the aged poor of Exeter on Christmas Day last, and conveying the hope that Mr. Hems may long be spared to continue his generous bounty to the less favoured citizens. This is the second time her Majesty has forwarded her congratulations to Mr. Hems, the former occasion being Christmas, 1879.

Mr. Fisher, deputy surveyor to the urban district council of Smethurst, Birmingham, has been elected surveyor to the urban district council of Felixstowe and Walton, in succession to Mr. G. S. Horton, resigned.

The new Baptist Chapel at Horfield, Bristol, will be formally opened on Wednesday week, the 16th inst. It is seated to accommodate about 1,000 persons. A feature of the interior is the raised baptistery and platform, above which a carved pulpit is erected, specially designed by the architect, Mr. R. Milverton Drake, and presented to the church by the contractor, Mr. R. F. Ridd.

At Standish, Wigan, a new mill, comprising a weaving shed and preparation rooms for 650 looms, has been opened. The outlay has been over £10,000.

A memorial stained-glass window has been erected in Pollokshields East United Free Church. The subject is "Christ Washing His Disciples' Feet," and the artists are Messrs. W. and J. J. Keir, of Glasgow.



buildings thus brought into review, and giving an account of modern architectural work in this country in the 19th century. No doubt the Germans have much to learn from British architects, though some London and American members of the craft have drawn of late considerable inspiration from the more advanced and peculiar designers in Germany, more particularly in the matter of strange interior wood-work on what is known in this country as "Art and Crafts" lines. Most of the subjects chosen for illustration in Mr. Muthesius's folio have, of course, already appeared in the pages of the BUILDING NEWS; but in their present form they are presented by specially-prepared photographs showing the buildings as executed, and by views taken from fresh points probably not realised by the architects of the buildings shown when they made their designs or had a regulation perspective prepared. Mr. Norman Shaw's house, like all his buildings, has a skillfully-contrived and ingenious plan. We show a copy of that of the main floor, by which it will be noted how head-room for the main staircase is schemed under the raised recess seen in the view of the library included among our plates to-day. The chimney-piece, by this arrangement, is recessed in the form of a sort of inglenook from the room, a projecting screen to the right shielding the doorway. Above the inglenook in the dining-room a small "den" or own room is introduced, with a timbered front, and a casement overlooking the apartment out of which it is managed, with its stairway to the left of the fireplace recess. The music-room has an ante-chamber, where the organ is located, and a great feature of the drawing-room proper is made of the large

* See drawing by Maurice B. Adams, BUILDING NEWS, Dec. 21, 1893.

Building Intelligence.

THE NEW WAR OFFICE BUILDING.—The First Commissioner of Works has intrusted to Mr. Francis Clyde Young, A.R.I.B.A., the carrying out of the plans for the new War Office buildings which his father, Mr. William Young, had in hand at the time of his death. Mr. Clyde Young understood every point of his father's intention, and the architectural design will be realised by him under the close superintendence of Sir John Taylor, K.C.B., consulting surveyor to the Office of Works.

BRISTOL.—The designs for the Museum extension and Art Gallery, which have been forwarded by Sir Wm. Henry Wills, Bart., has been exhibited in the Bristol Council Chamber this week. They have been prepared by Mr. Frank Wills, in conjunction with Messrs. Houston, of London, and the style of architecture adopted is Classical Renaissance. The building will comprise a central hall, 47ft. 6in. by 59ft. 6in. and 40ft. in height, in addition to which there will be on the ground floor two rooms—one 63ft. by 35ft., and the other 63ft. by 33ft. 3in.—and two other rooms 43ft. by 29ft. 6in., and of a sufficient height to allow of galleries being added should future extension be needed. The gallery around the central hall will lead to rooms which can be used for refreshment-rooms, and other offices. The upper portion of the building devoted to the art gallery will include two large rooms 64ft. by 30ft., two smaller ones 43ft. by 30ft., and a fifth room or gallery 47ft. 6in. by 30ft. The basement, for which a separate entrance is provided, will contain storage space, workshop, heating apparatus, &c., and a lift will be provided from the basement to each floor. Sir William has approved the drawings, and he has now placed them before the council.

HUDDINGTON.—The interesting church at Huddington, near Worcester, has been undergoing a much-needed renovation. The church, which was in a deplorable state, is a small building of stone, chiefly in the Perpendicular style. The architect for the restoration has been Mr. C. Ford Whitcombe, of London and Worcester. Amongst the improvements has been the underpinning at the corners of most of the walls. The roofs have been stripped of their modern plaster, and have been restored as open roofs. The 17th-century low seats have been retained, but made more comfortable; and the flooring, which in many places was nothing but large holes, has been replaced with pitch-pine blocks. The stall in the chancel, the altar-rails, the curious old pew, the screen, the pulpit, and the quaint chest (formerly used for storing the parish archives) have all been preserved. The fine old porch, one of the features of the church, has been braced to the north nave wall and repaired, and the old door, with its early iron-work, has been retained. Previous to the restoration there was a rabbit-warren in the south chapel. Other bipeds and quadrupeds have found the church a haven of rest, but these and the rabbits have now been evicted. The church contained seven different designs of old roof and other tiles, and these have been preserved with their greens and yellows, and are now framed and put together and are shortly to be restored. During the progress of the work some stones of a Norman arch were found buried in the wall above the chancel arch, and it is hoped to replace these in their rightful positions, and also to restore the niches, &c., in the east end. The decorations include some rich embroideries. The cost of the work was about £1,050.

PRESTON.—The Prince's Theatre was reopened on Saturday after important internal improvements. The unsightly roof timbers and the wooden uprights which supported them have been removed from the auditorium, so that the occupants in all parts of the balconies now have an uninterrupted view of the stage. The theatre having been increased in height has facilitated the effecting of improvements in the ventilation, carried out by Messrs. James Stott and Co., engineers, of Manchester. The old boarded floor of the pit has been replaced with Duffy's patent wood-block flooring laid on cement concrete by the Acme Wood Flooring Co., Ltd., Gainsborough-road, London, which is both fire-proof and noiseless. Additional emergency exits from the pit have been formed on each side of the stage. The staircases to the centre circle and

balconies are of stone, inclosed with brick walls, and both the mezzanine floor and ceiling above it are of fireproof construction. The seating accommodation of this part of the house has been rearranged and improved. The proscenium opening, 23ft. wide and 24ft. high, is fitted with cast iron and asbestos fire-proof curtains, supplied by Messrs. Merryweather and Sons, of London. The same firm also supplied the gunmetal fire hydrants, which are placed both in the theatre and also on the stage. The proscenium opening has been decorated in "fibrous plaster" by Messrs. Goodall and Co., of Liverpool, who also executed the balcony front. The stage has been improved by the provision of spacious fly floors 33ft. apart, scene artist's painting bridge, and a grid, 50ft. above the stage. The stage is also considerably enlarged, being 63ft. wide and 40ft. deep. Eight additional dressing-rooms have been provided at the back of the stage, from which they are cut off by iron doors and a corridor. The contract for the whole of the work was let to Messrs. Whiteside, builders, of Preston, in conjunction with their sub-contractors Messrs. T. Croft and Sons, brickwork and masonry; Mr. W. Dryden, ironfounder's work; Mr. Thomas Nickson, slating; Messrs. Foster and Son, Padiham, plasterer's work; Mr. Elge, gas fitting and stage lighting; and Messrs. Park and Son, plumber and painter's work. The alterations have been carried out under the superintendence of, and according to plans prepared by, Mr. William D. T. Munford, architect, Guildhall-street, Preston.

ROCHESTER CASTLE.—The repairs to the keep of Rochester Castle, arranged to be executed during the year 1900, are now completed. The work has been carried out under the supervision of Mr. George Payne, architect. Half of the interior of the building, on the southern side, as far down as the floor level of the state chamber, has been restored, and certain arches which were structurally unsafe have been made good. A gallery along the same side was in a very ruinous state, especially where the great crack occurred after the rebuilding of the south-east angle in the 13th century. In his report to the Rochester Corporation, Mr. Payne states that a large amount of the damage everywhere present in this gallery was due, as in all accessible parts of the keep, to the wanton destruction of arches and jambs in past times for the sake of the squared stones they contained. As these supports had been removed, it was deemed necessary for the stability of the fabric to replace them with Kentish rag. One outcome of the repair of the eastern wall of the keep has been to bring several interesting architectural features to light, and these are now permanently exposed to view. The beautiful arcade dividing the state chamber has been successfully treated. Traces were discovered, whilst the central wall was being repaired, that the keep had at some period suffered from fire. The cleaning out of the well of the keep proved to be a laborious work. The total depth from the top of the central wall of the keep to the bottom of the well was found to be 136ft., and the diameter of the well-shaft from 2ft. 9in. to 4ft. At low tide the water in the well has a depth of 18in., but at high tide it reaches 9ft.

SPRING HILL, BIRMINGHAM.—The foundation-stone of the new parish church of St. Peter, Spring Hill, was laid on Saturday. The building is being erected in George-street West, from plans prepared by Mr. F. B. Osborne, the contractors being Messrs. William Sapcote and Son, also of Birmingham. The style is Early Perpendicular; the building will be constructed in red brick internally, and externally with Hollington stone arcades, windows, and dressings, and the roofs will be covered with tiles. The total internal length of the church will be 145ft. The width of the nave and aisles will be 54ft. In addition, there will be two shallow transepts, increasing the width to 68ft. in this portion of the church. The seating accommodation will be for 750 persons. The cost, including the organ, will be £12,900.

WARWICK.—Good progress is being made with the restoration of the great parish church of St. Mary, towards which £15,000 has been raised in the last 16 years, and a further appeal is now made. During 1900 a memorial west-end screen and lobby has been placed at the great west door to perpetuate the memory of the Rev. Alexander Campbell Irvine, vicar 1881-1899. At the west end memorial screen there has been placed the organ case, which is to contain the solo organ and

the 32ft. pedal stop. Four cherubs, carved by Grinling Gibbons, adorn the old organ gallery. The great and swell organ are at the east end of the north aisle, the pedal organ at the east end of the south aisle of the nave, and the choir organ is inside the chancel. One console of the organ is just outside the chancel arch on the south side, and the tube is laid under the floor of the north aisle of the nave, which is to carry the electrical communication to the west-end organ. In the choir of the church are now three painted-glass windows, from the studio of Mr. C. E. Kempe.

CHIPS.

The technical school and free library at Leigh, Lancs., are about to be extended by the town council at an estimated cost of £5,000. An additional reading-room, 33ft. by 19ft., will be built, at a cost of £1,400. It is also proposed to extend the technical school by putting two new classrooms in the basement, two new classrooms on the ground floor, and a laboratory and physics theatre on the first floor, at a further cost of £3,500.

A new seaside resort is to be established between Blackpool and Fleetwood, to be called Rosall Beach. It will have 1,000 yards of sea frontage, and an important feature in its proposed development is the devotion of a ten-acre park to the use of the residents.

Professor John E. Sweet, president of the Straight Line Engine Works, Syracuse, New York, has received from Messrs. Roddis and Nourse, sculptors, Birmingham, a bust of James Watt, the great inventor, which will be placed in the central niche in the front of the Straight Line Engine Works building in South Gaddes-street. The bust is about one and a half times natural size, and is executed in terracotta. When in England last summer Professor Sweet engaged Messrs. Roddis and Nourse to do the work, and they secured the model from the statue over the grave of James Watt in the old church at Handsworth, Birmingham. This is believed to be the first bust of Watt ever seen in America, and the first art work of the kind that has ever been used as a decoration for an American factory.

The Bradford (Yorks) City Council has recently had under consideration a number of applications for the post of city architect. There were originally over seventy candidates, and of these six were selected to appear before the finance sub-committee empowered to deal with the matter on Monday last. The appointment was ultimately conferred upon Mr. F. E. P. Edwards, A.R.I.B.A., for some time chief assistant in the architectural department of the Liverpool city surveyor (Mr. Thomas Shelmardine), and joint hon. secretary of the Liverpool Architectural Society.

Mr. Charles Hamley, aged 35, surveyor, of Plymouth, with offices in Courtenay-street, recently committed suicide by cutting his throat at his residence, 16, Grimstone-terrace, Horndiscombe-road, Plymouth. Of late Mr. Hamley had been depressed, owing to the death of his young wife in childbirth several months since.

The thirty-one Provisional Orders which are being promoted in Parliament next session as private Bills for Scotland involve a capital expenditure of £6,090,120, as compared with £5,732,500 for twenty-seven companies last year.

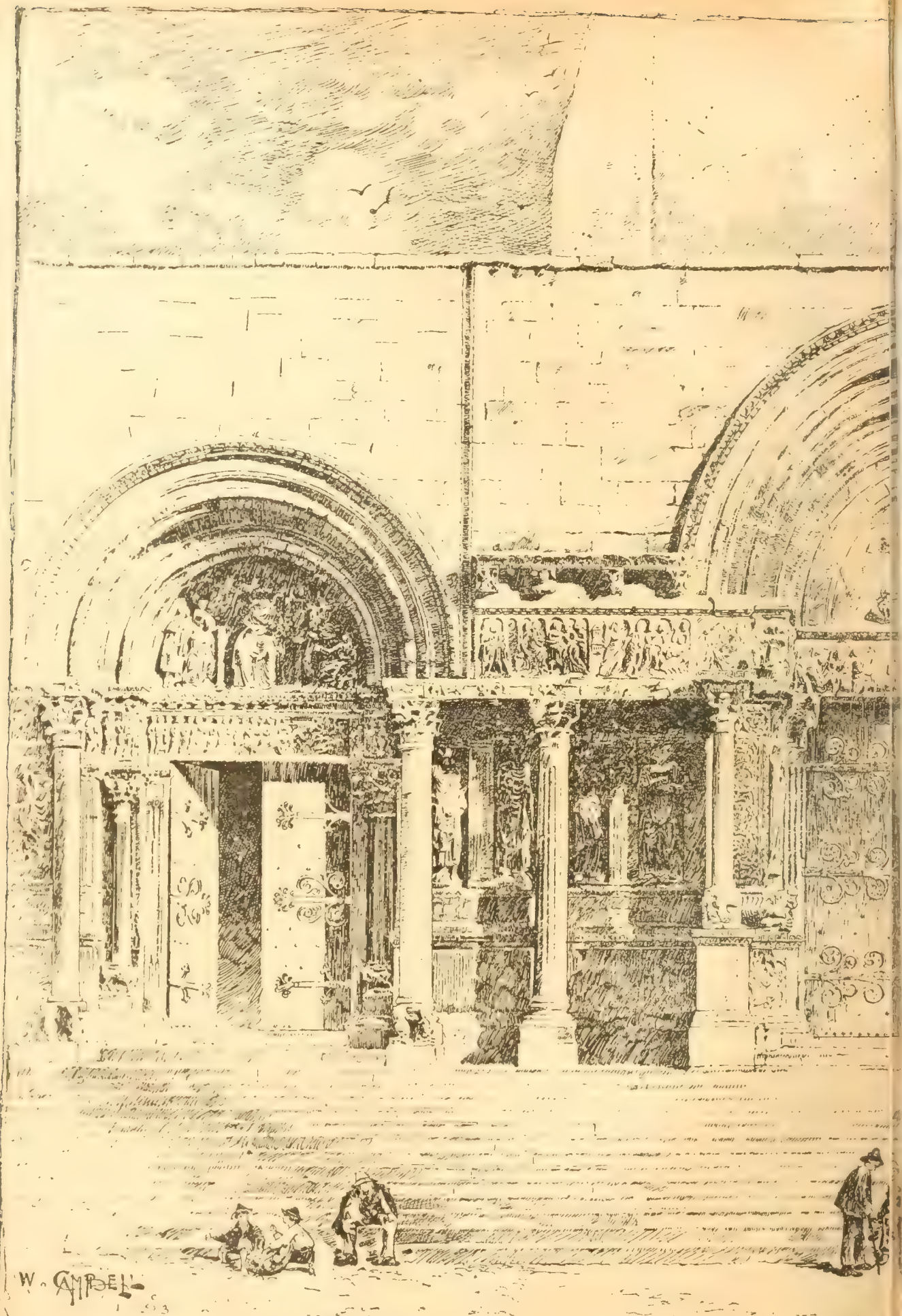
The new Conservative club at Brixham was opened on Friday by Mr. F. P. T. Struben, of Torquay. The building has been erected on a site adjoining the Market Hall, at a cost of £1,500, from plans prepared by Mr. E. Richards, of Torquay, the contractors being Messrs. Hazelwood, of Brixham.

Mr. Henry Wood, of Highlands, Champion-hill, and of the firm of Beadel, Wood, and Co., of 97, Gresham-street, surveyor, honorary treasurer of the Baptist Union of Great Britain and Ireland, who died on October 6 last, aged 58 years, has left an estate of £59,005 gross, including personality of the net value of £42,680.

A new organ built by Messrs. Hele and Co., of London, Exeter, and Plymouth, was opened in Rickmaesworth Parish Church last week.

The premises of the Co-operative Society in Botchergate, Carlisle, are about to be reconstructed from plans by Mr. T. Taylor Scott, architect, of that city. It is intended to rearrange the premises, and form an arcade. It is also proposed to remodel the front elevation. The estimated cost of the alterations is about £13,000.

The new Victoria Central Hospital at Liscard was formally opened on New Year's Day. The site was the gift of the late Mr. John McInnes, the building cost £12,000, and the furnishing cost another £4,000. At present the hospital is supplied with 40 beds, but two extensions are projected, each providing another 40 beds, thus to complete the total proposed accommodation of 120 beds.



PORTAL OF CHURCH AT ST. GILLES, FRANCE







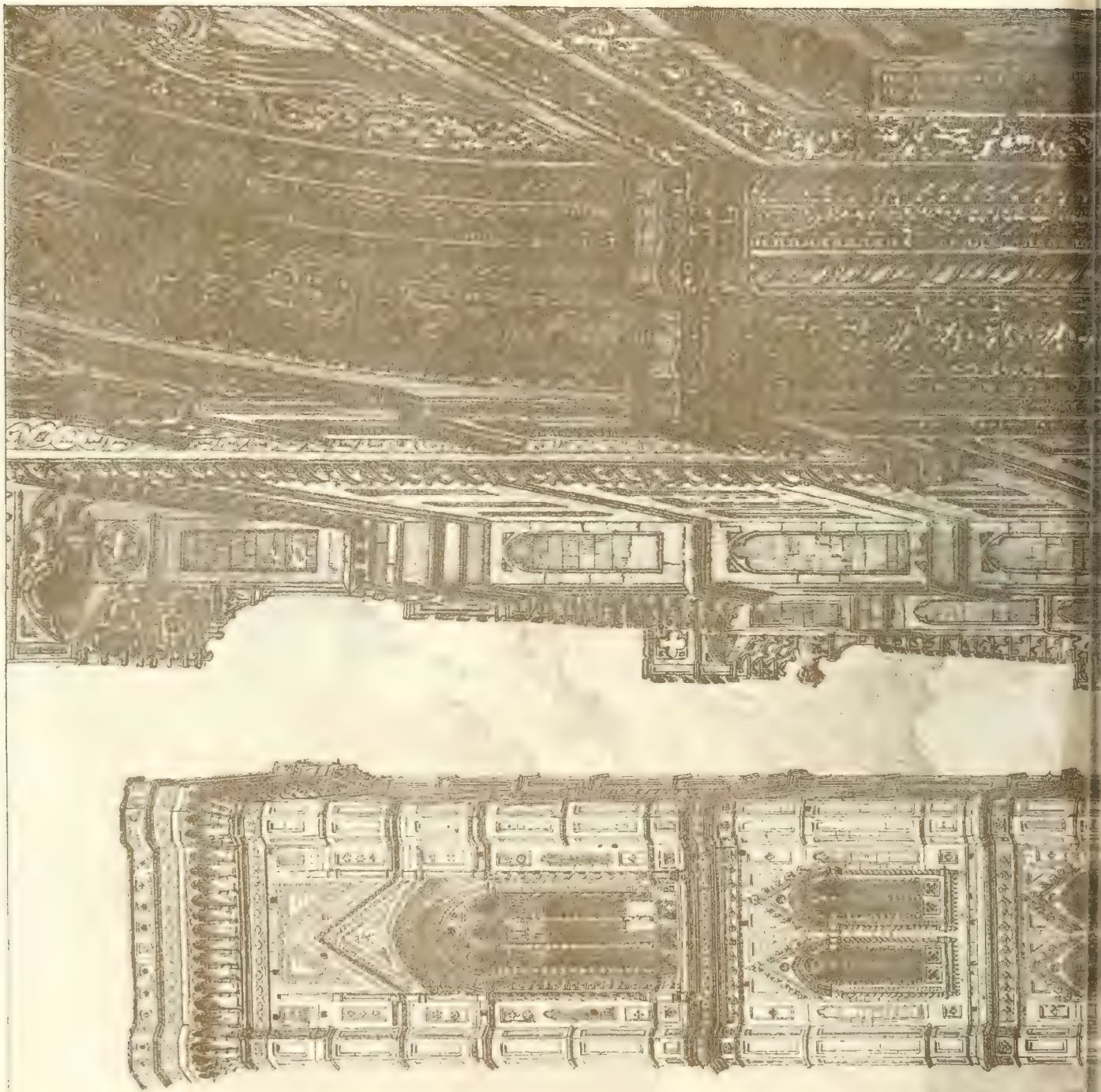
VIRGIN AND CHILD ENTHRONED
BY ANDREA MANTENGA

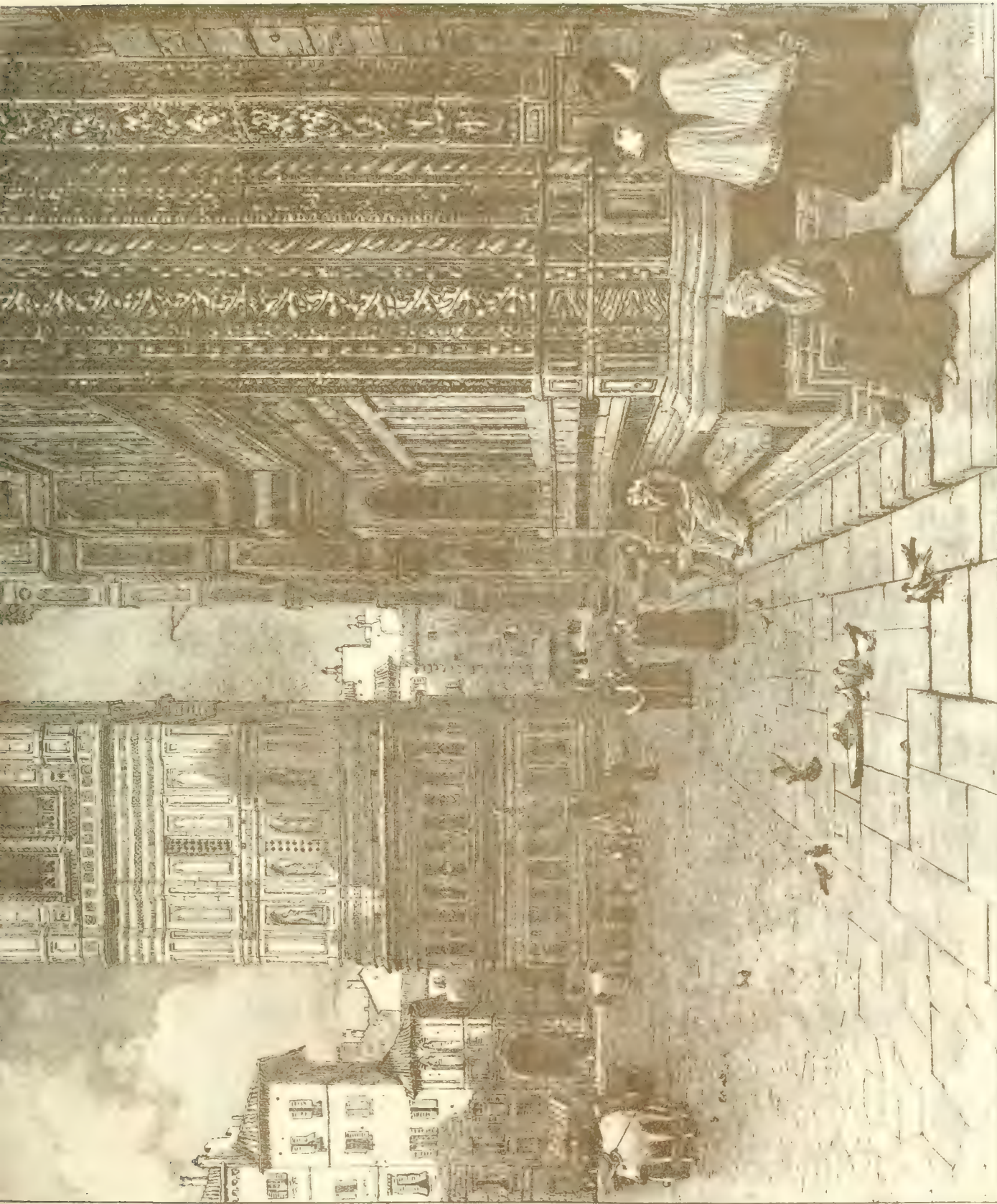






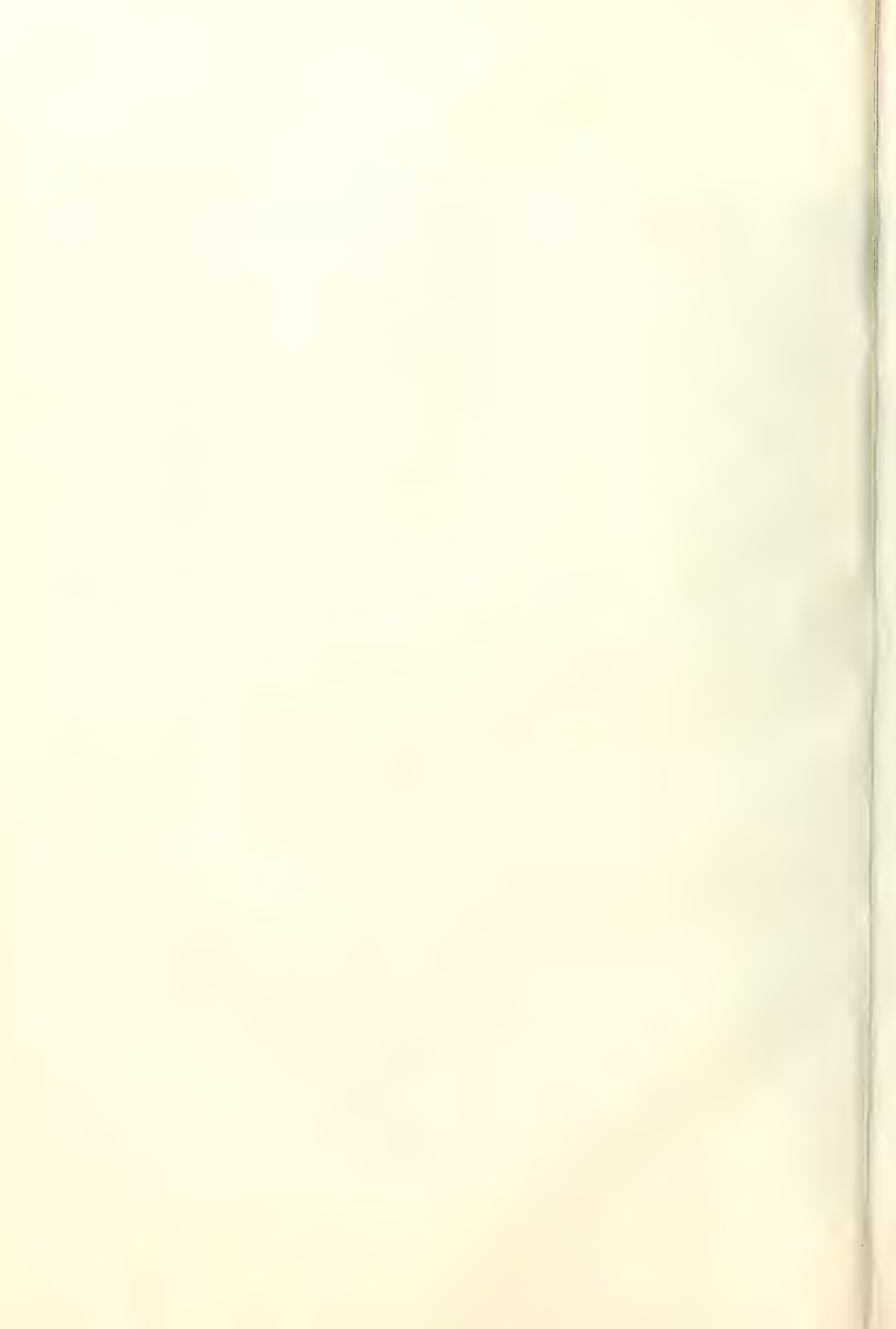


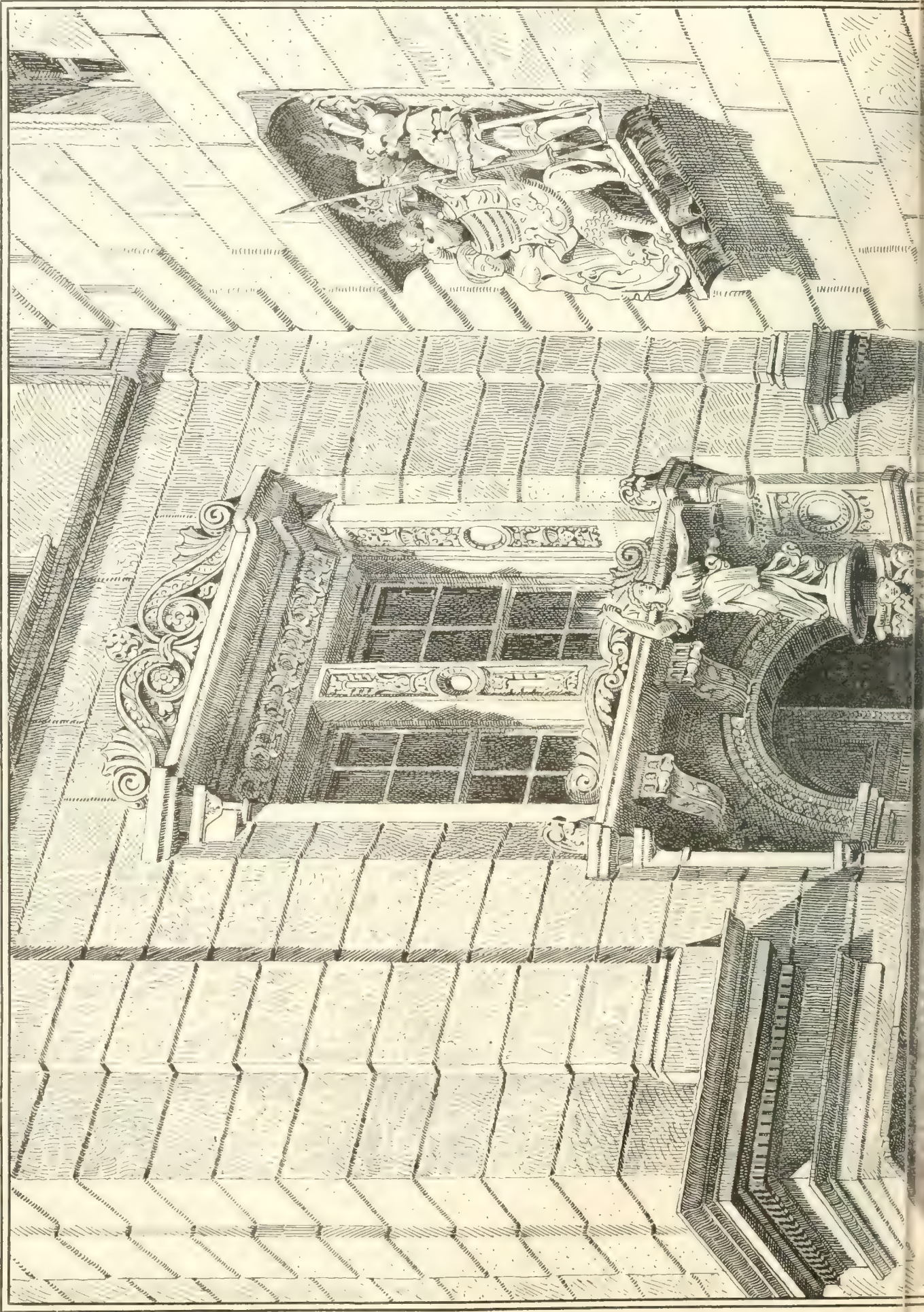


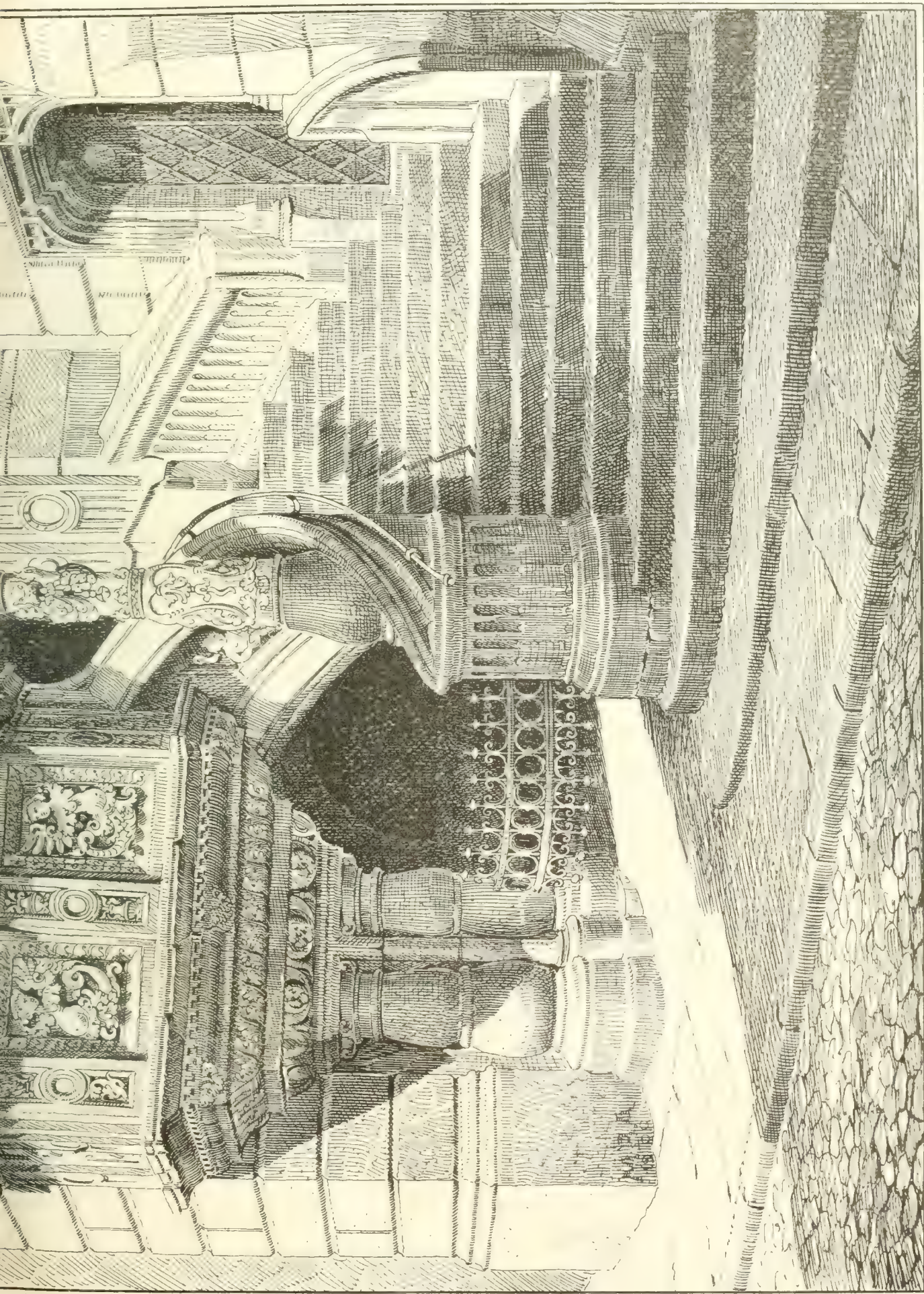


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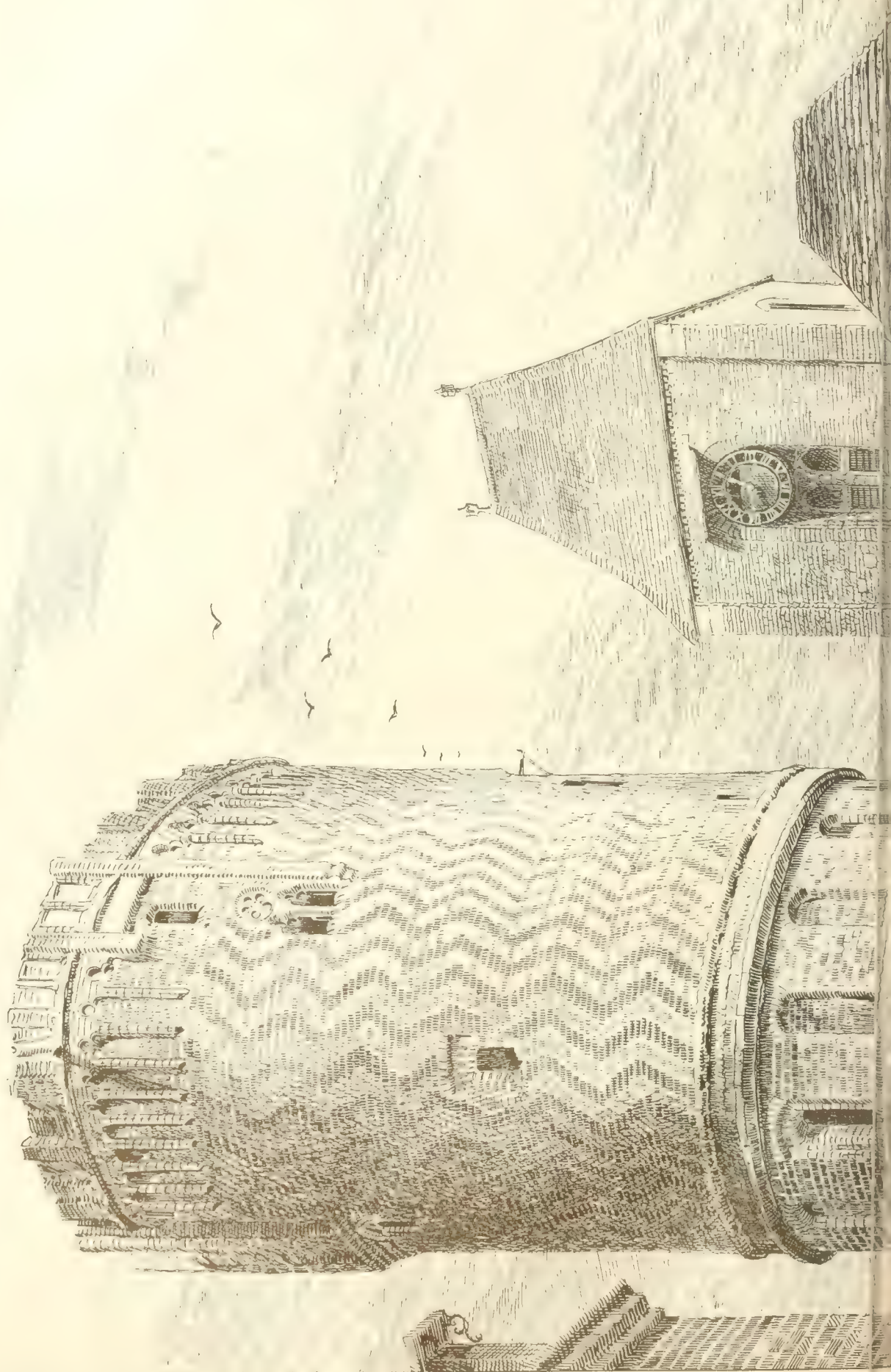


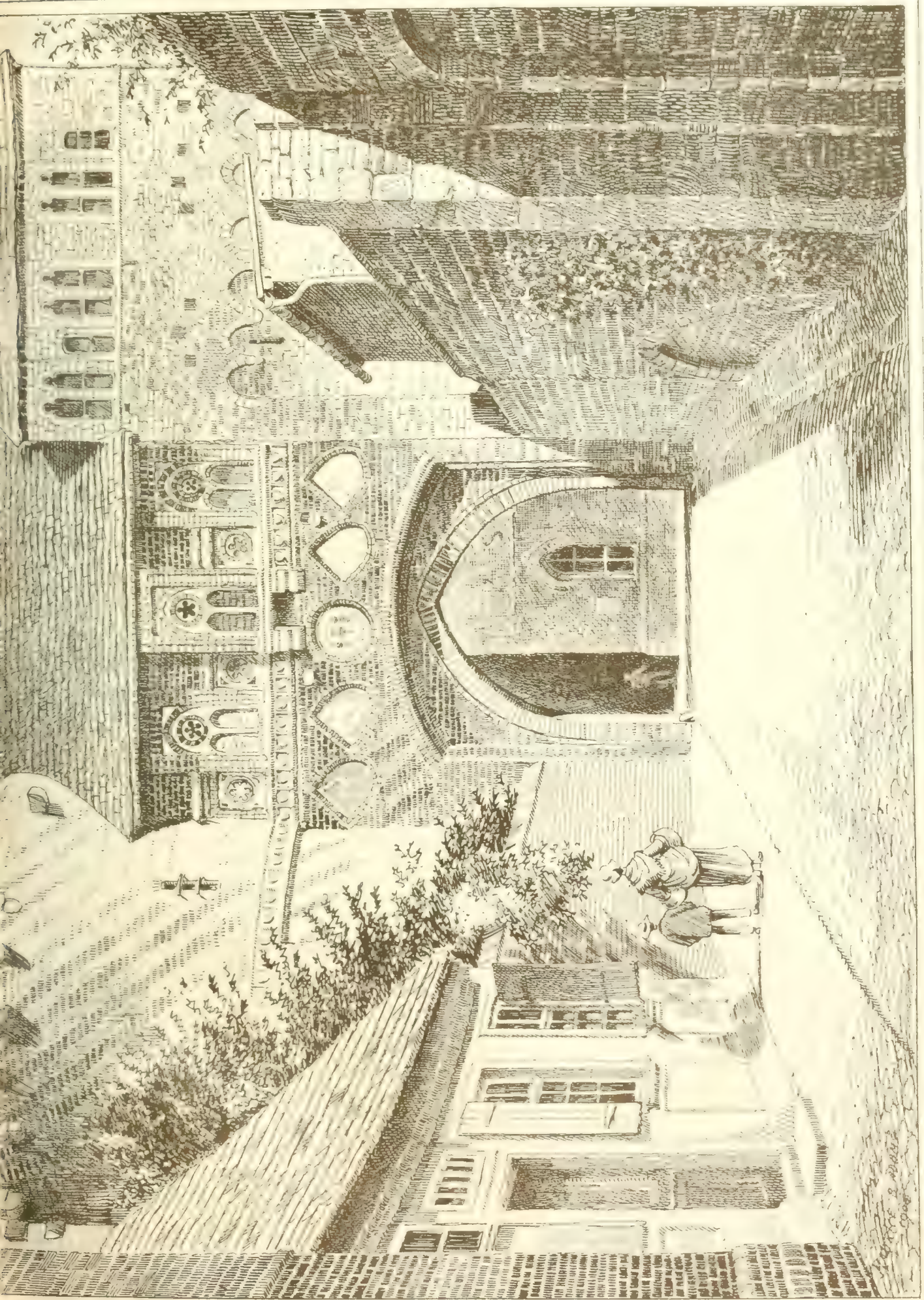




THE COURTYARD ENTRANCE, GÖRLITZ TOWN-HALL.

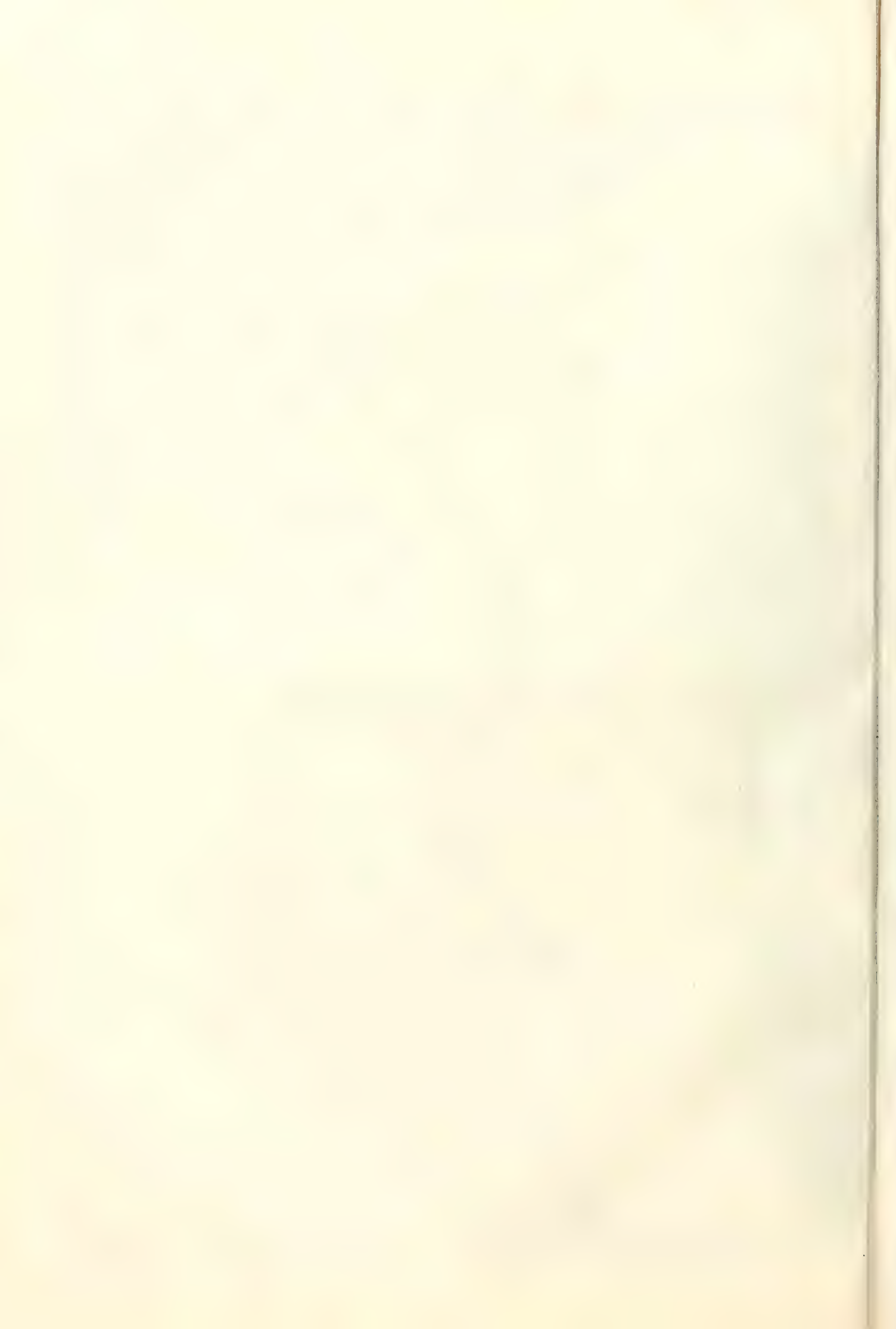
DRAWN BY MAURICE B. ADAMS





THE NEUSTÄDTER THOR, TANCERMÜNDE, GERMANY

DRAWN BY MAURICE B. ADAMS



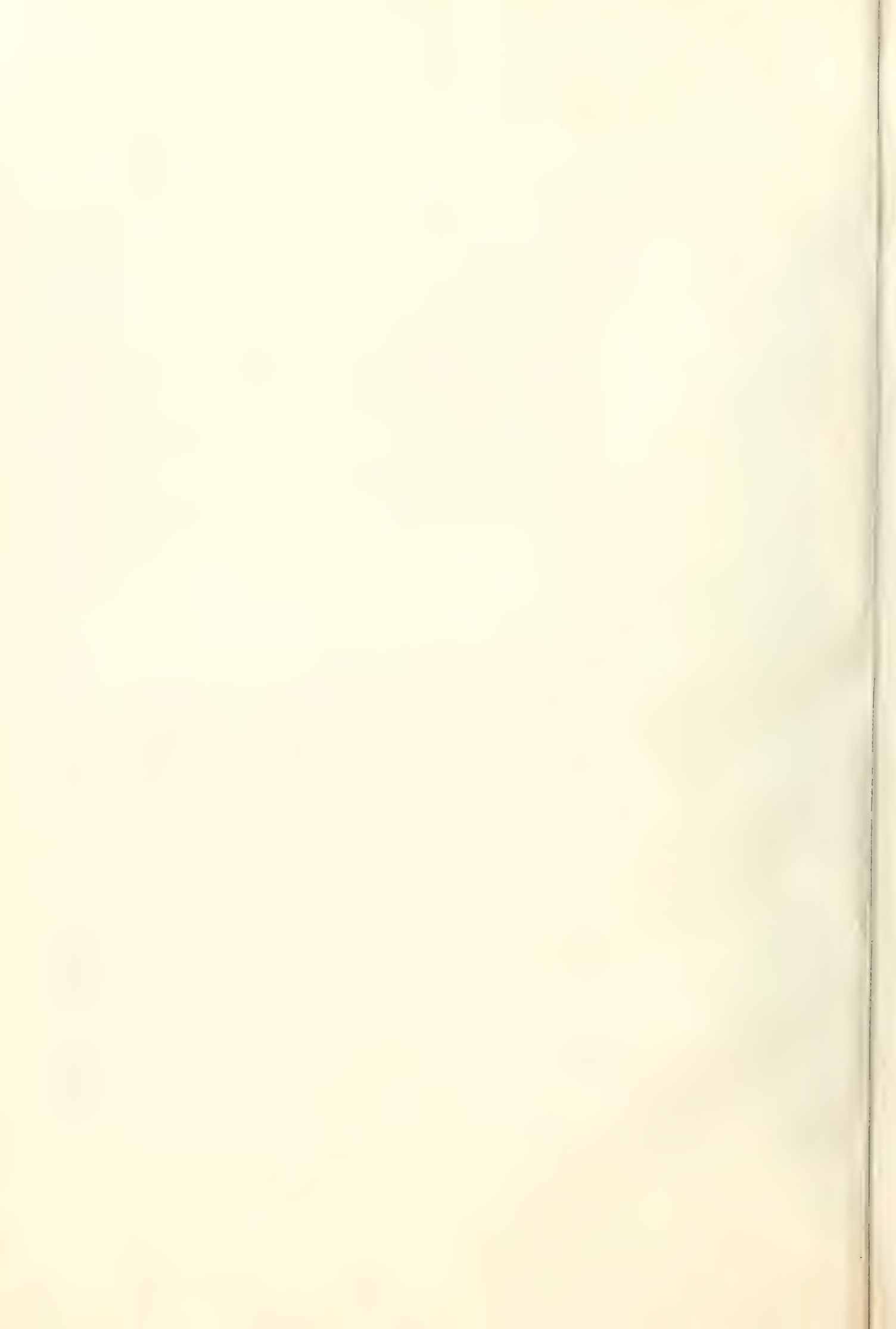


NEW STATION, SÃO PAULO
THE LATE CHARLES L.

JANUARY 4, 1901



SÃO PAULO RAILWAY, BRAZIL.
R. F. I. B. A., ARCHITECT, 1900.







THE TOWERING HOUSE AT PANGBOURNE.
JOHN BELCHER, A.R.A., ARCHITECT.





THE LIBRARY. MR. NORMAN SHAW'S DW

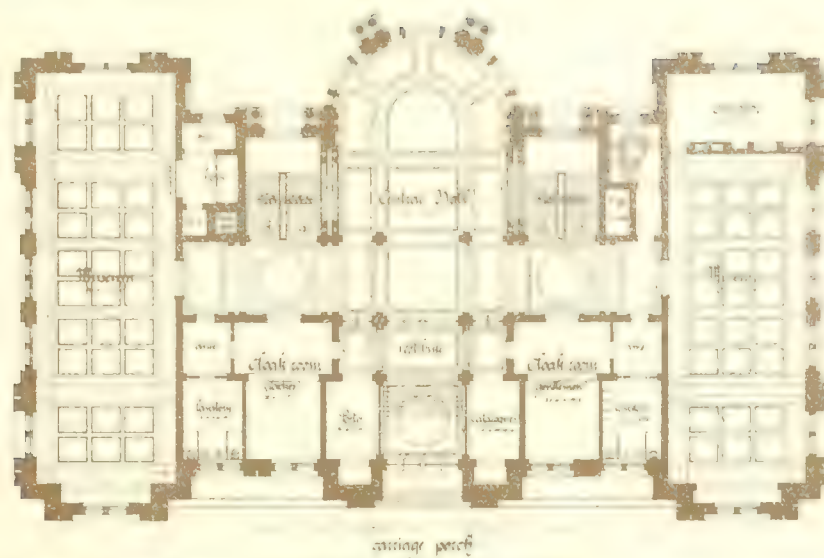


HOUSE, ELLERDALE ROAD, HAMPSTEAD.



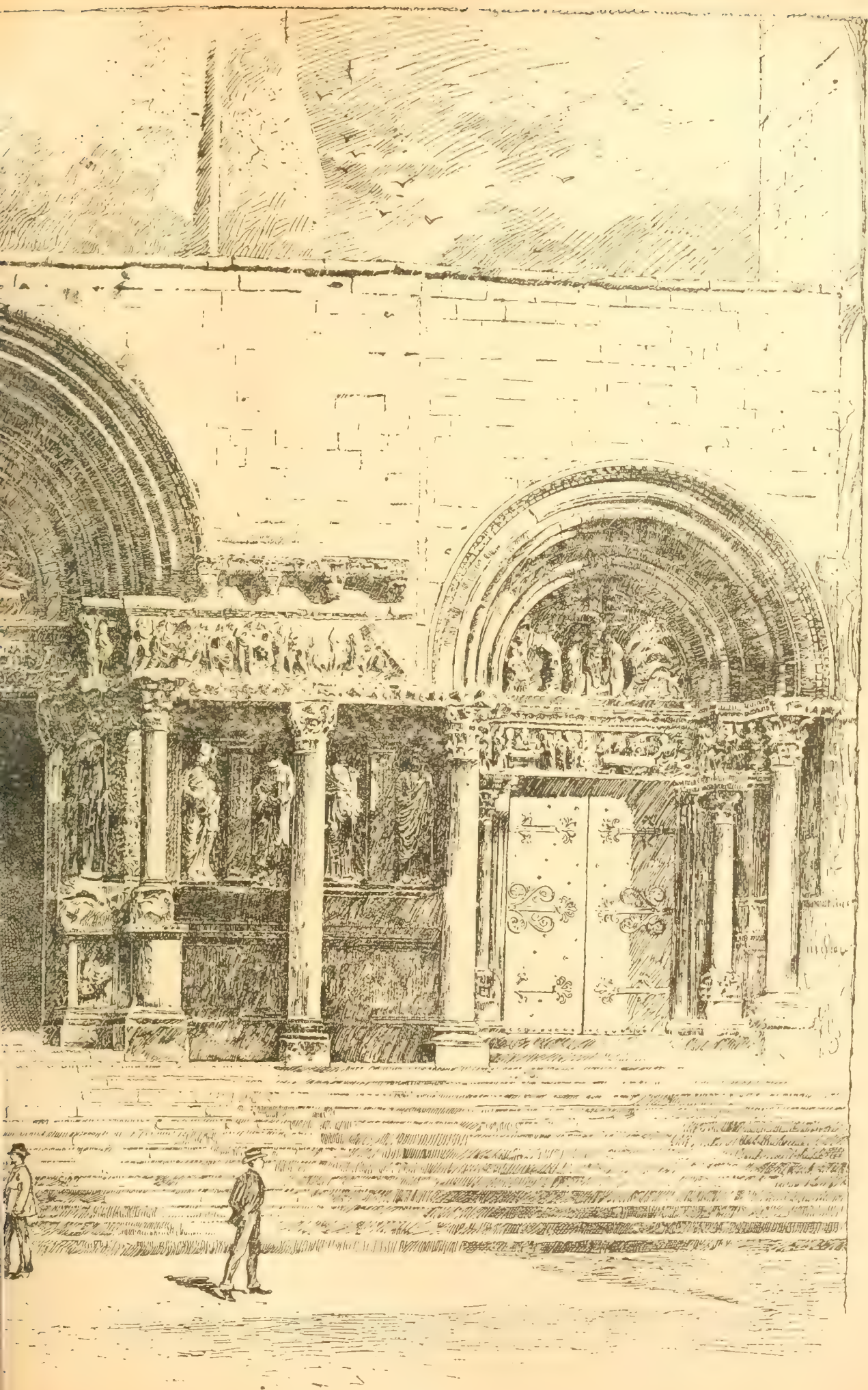
▼ THE CARTWRIGHT MEMORIAL HALL. DRAFTER ▼ JOHN SYMON AND ALLEN ARCAD ▼





Ground Floor Plan





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SITUATIONS.

The charge for advertisements for "Situations Vacant" or "Situations Wanted" is ONE SHILLING FOR TWENTY-FOUR WORDS, and Sixpence for every eight words after. All Situation Advertisements must be prepaid.

RECEIVED.—B. E. and Co.—J. Miller.—W. F. Dickens.—J. B.—K. D.—N. F.

"BUILDING NEWS" DESIGNING CLUB.

SECRETARY, NO. IV.

D.—A paraded Club for Working Men, to be erected on a S.W. right-angled corner site in a village street, having a main frontage of 50ft., with a depth of 45ft. at its east end, and 60ft. on the return frontage at west end. The accommodation to include a hall for meetings 50ft. long by 25ft. wide, and of proportionate height; and in this room there is to be a platform or stage arrangement adaptable for smoking concerts, &c., with a retiring-room. The club-rooms to consist of a reading-room for newspapers, 25ft. by 15ft., or of that size. A reading-room for books and magazines, 18ft. square, or thereabouts, this room being used for smoking. A billiard-room for two full-sized tables, and a card or writing-room, 12ft. by 14ft. Provide a lavatory with three w.c.s., and stand of four urinals, for use of the club. The entrance-hall should be central, and a small bar counter on one side of it, about 12ft. long. The steward's rooms to be on the first floor, and consisting of kitchen, pantry, living-room, and three bedrooms, one being for a maid-servant. Offices to match. Yard to be formed on asphalt, flat if necessary, over some of the club-rooms. A mezzanine

arrangement might be adopted for one or more of the smaller rooms if desired. The entrance to the club to be on the main front. Scale, 8ft. to inch. Two plans, two elevations, section, and view. Materials optional. Size of paper, 25in. by 18in. Style, Renaissance.

DRAWINGS RECEIVED.—"Brush," "Perseverance," "Primus," "Apex," "Jove," "Eolier," "The Tramp," "Wisthe," "Corinium," and "Sun Dial."

Intercommunication.

QUESTIONS.

[11654].—**Motive Power.**—Will any builder, having experience of the use of gas and electricity for driving wood-working machinery, give me his experience as regards the advantages and economies relatively of these motive powers? Electrical engineers suggest that it is more economical to employ motors for each or several machines, instead of having one large motor to drive all the machines in a builder's shop. In comparing the relative merits of gas and electricity, what are the relative values of gas, say, at 3s. per 1,000ft., and electricity for motive power?—EXCELSIOR.

[11655].—**Right to Build.**—Can anyone inform me how best to proceed under the following very unusual circumstances? The owner of the property fronting that in which I have an interest, claiming half the roadway as his own, has inclosed it, and is using the plot as an extension of his garden. The roadway at this part of the thoroughfare has not been made up, but a public sewer is already in, continuing from the upper end of the same street, which has been adopted by the local authority for some time. The same authority has unsuccessfully endeavoured to eject the aforesaid owner, and to compel him to set back his frontage from the centre of the intended highway; but on the plea that the road has not been dedicated to the public he remains master of the situation. In the mean time the local authority refuses to pass the plans for the houses intended to be built on our land because there is not a 40ft. roadway in front of us owing to the before-mentioned extension. What can we do?—CHECK-MATE.

[11656].—**Motto.**—Can any reader suggest a suitable motto—quotation from Shakespeare or otherwise—to be carved upon the frieze carried round inside a small summer-house, standing in the corner of a private pleasure garden?—V. B. L.

[11657].—**Right of Light.**—I have lately purchased a freehold property, with sufficient garden on which to build if I wish another house; but adjacent to the site on which I should, in that case, put the house is an artist's residence, with a studio, having a large window and skylight overlooking my property. The wall in which this window occurs is probably about 8ft. from the party line, the top of the light being some 20ft. from the ground. The adjoining owner's house has been erected about eighteen years. What must I do to establish my right to build before the statutory twenty years expires, and so prevent him from claiming an ancient light? If he can show that he has enjoyed uninterrupted light for nineteen years and a day, I suppose I should be debarred from building nearer than his right to 45°. Must I put up a big board on my boundary line to the probable height and size area of the house I might wish to build? This would disfigure my property, and look unseemly. Can I establish my legal rights in any other effective way?—A CAUTIOUS OWNER.

[11658].—**Book-keeping.**—What is the best system of book-keeping for a builder's business? Unfortunately, this is frequently a matter to which little attention is given. In an ordinary business, with contract, extra, day, and jobbing work, it is both difficult to get from the men on their time-sheets details of the work done, and more so to be sure that all the materials are entered on their sheets. What is the best mode of insuring this? And what is the best system of book-keeping afterwards, so as to keep a definite record of the cost, profit, and expenditure on the works?—J. A.

[11659].—**Wood-working Machinery.**—For the purposes of an ordinary joiner's shop, what are the most useful machines? For the ordinary moulding work required, which is the most satisfactory machine—the ordinary single-spindle machine, the improved planer and moulder, now produced by most makers, or the machine with the top cutter, which also does recessed work? I also want to know what other machines are desirable?—DENISE.

[11660].—**Corrugated Iron for Roof.**—Will an experienced correspondent tell me which is the right thickness for corrugated iron or the No. of gauge for roofing a railway shed? Also whether such a roof would stand the smoke long and if it should be painted or not?—A. T.

[11661].—**Oil Paint without Lead.**—Wanted, a suitable oil paint for indoor house painting that contains no lead.—S. B.

[11662].—**Washable Distemper.**—Wanted, a washable distemper or water-paint similar to Duresco.—S. B.

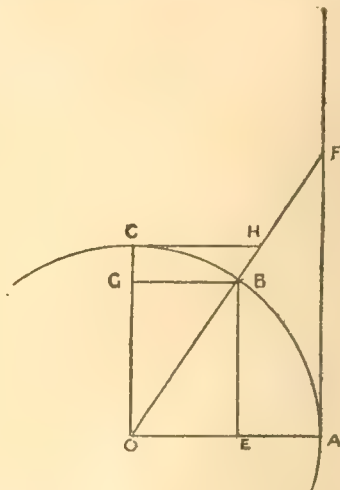
[11663].—**Gilding.**—I have several picture frames which are very much in need of gilding. I have tried various gold paints, but everyone is a failure, and the colour goes after a short time. I thought I should like to try to gild them if it is not a very difficult task, if any reader would kindly give some information.—E. J. B.

[11664].—**Electricity v. Gas.**—Could some expert advise me as to whether electric lamps would be cheaper than gas for two small lights, at present using the latter, but which costs 5s. per thousand? The lights are only about 4-candle power each, but burning continuously use a lot of gas. What outfit would be economical? Advice as to battery, &c., will be thankfully received by—BUSH-LIGHT.

[11665].—**Garden Path.**—I have a garden path which I wish to asphalt. If this is not a very difficult matter

I shall feel obliged if any reader will tell me how to do it. I have about 100 square yards to do, and should like to know the quantity of each material required. I have a lot of rough steam ashes if they would come in for the job, or any part of it.—H. W.

[11666].—**Sine, &c.**—Trying to get clear ideas about these, I find a perplexity at the outset, and venture to ask some very elementary questions, thinking the answers may help others as well as myself. I have only two books on trigonometry, which seem to treat it as two wholly different things. In one sines, &c., are actual lines, connected specially with a circle. In the other they are proportions only, among sides of a right-angled triangle, which proportions, in form of a fraction, do not represent the actual lines first mentioned at all. I. Lines. "Chambers's Information" (1842) has this diagram.



BE is the sine of the arc A B. A F tangent, O F secant, B G cosine, C H cotangent, O H cosecant. (a) Is there a special branch of trigonometry relating to lines about a circle, and sine, &c., of an arc, something different from that of the angle? Then rules are given, as:— "When two sides are given to find an angle make a given side radius, then that side is to the other given: as radius to the trigonometrical name of the latter side." (b) Are rules in such form of any use? (c) When, and for what, are sines, &c., treated and spoken of as lines? (In introduction "Chambers's Mathematical Tables" the logarithmic sines, &c., are the "logs. of the Nos. that express the lengths of these lines for any given arc.") If Ratios. School-book gives (above triangle A O F) A F sine, A O cosine, O F secant, O F cosecant, A O tangent, A O cotangent, which is all as we see it commonly

used. But take this sine $\frac{A F}{O F}$, it does not represent the line BE (under "I"), or anything like it. (d) How comes it the same word is used for such different things, not seeming to have any kind of connection?—VERDANT GREEN.

REPLIES.

[11639].—**Abandonment of Easements.**—If the old windows are blocked up, and their position has been lost, "Anxious" may certainly protest against new openings being opened in another part; but this point must be determined. If the new window is not in the same position as the old one, the owner of the ancient light cannot claim for a new easement, or, in other words, he must not increase the servitude. So long as the position of the new window occupies parts or spaces of the previous one, the ancient light is not abandoned, and this ought to be found out before any proceedings are taken. Merely altering the position of the wall, advancing or retiring, it has been decided, does not prove abandonment of light. If, on the contrary, it can be proved that the ancient light was abandoned, and a new one substituted in a different position, "Anxious" has a case. If new shutters project, "Anxious" can cut them off, and he should also make objection to any new steps.—G. H. G.

[11646].—**Spacing Pilasters.**—I cannot quite understand what "Student" refers to by the diagrams. If he wants to know how to space the pilasters in a semicircular building, let him divide the wall into the required number of spaces, or radii through centres of pilasters. Set off width of each to right portion of height, and diagram B assumes a straight line between the pilasters, which may be adopted in some cases; but I should prefer a circular surface, even if the pilaster is "rectangular or straight on the face. If this is not "Student's" meaning, perhaps he will explain.—H. G.

[11652].—**Rust.**—As you require a clarifying apparatus, most likely a cloth filter would answer the purpose; but the cloths must be frequently cleaned by dipping, say, in weak hydrochloric acid, and afterwards well washed before use. Convenient to keep two sets of cloths, usually mounted in frames, and no doubt can be rapidly washed by a stream of water from a hose.—REGENT'S PARK.

[11653].—**Non-inflammable Wood.**—Soak (by weight) parts sulphate zinc 27.5, potash 11, alum 22, manganese oxide 11, in lukewarm water in iron boiler, and gradually add by weight 11 of 60 per cent. sulphuric acid. The wood is placed upon iron grating in an apparatus of suitable size, pieces at least 3in. apart. The liquid is then poured into the apparatus, and wood to remain completely covered for three hours, then dried in the air. Of course, other materials than wood for partitions can be used instead of wood.—REGENT'S PARK.

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THE REVISED SUGGESTIONS FOR COMPETITION.

NOTWITHSTANDING the numerous suggestions that have been made on the conduct of competitions, in our own columns and elsewhere, there are few competitions that give satisfaction; and when we come to think about it, we are led to the belief that these contests of skill will always be unsatisfactory to a large proportion of those who enter them. Is it even reasonable to think that the award, however just or honest, will meet with universal approval? There are competitors for architectural prizes who will declare their own design the best, even if they are inwardly convinced that they have been beaten. We do not expect unanimity on questions of skill or taste in every case. What we have to do is to eliminate as far as we can all those elements of inequality, unfairness, or injustice which so often afford a pretext for complaint, and which the unsuccessful competitor is often so glad to seize upon and make capital out of. The "revised suggestions" brought forward by the Council for consideration and adoption last Monday is another attempt to meet the requirements of competing architects—some of the amendments proposed have been suggested again and again in our columns.

The first clause of the Form proposed deals with the appointment and duties of the professional assessor or assessors. There has been a general agreement that the assessor's appointment should be made at the earliest possible stage in any contemplated competition, so that he may assist in drawing up the instructions to architects and conditions of competition, and advise upon the question of cost. Unless he is thoroughly acquainted with the conditions and instructions issued to competitors, he is not in a position to make a competent decision. The promoters of competition often prepare their own instructions by the aid of their surveyors. These instructions often contain requirements as to dimensions and areas, cost, &c., that contradict each other, and which no competitor can comply with honestly. The assessor makes his award independently of these instructions, or interprets them so freely that those who strictly comply with their letter are often thrown out. This condition of things is clearly unfair to a great many. In the matter of cost, ordinary promoters are apt to be led astray, and they fix on a sum that is often quite inadequate: the consequence being that a design is selected that cannot be carried out within the limit, much to the prejudice of other competitors. In many recent instances of public competition, this under-estimating has been the rule, and the buildings have had to be cut down or spoiled of their features. One other advantage of appointing an assessor early is that architects all know his predilections as to style, and the disappointment of designs being thrown out because they are in a style not understood by him is avoided. For this reason also, two assessors are better than one. Who is to appoint the assessor or assessors? We have here a less obvious question to answer. It may be questioned whether the Institute is in every case the best adviser, especially in a large open competition. The Institute or its President would naturally prefer one of their own members for the office, and such an appointment would carry a certain weight and

authority; but the objection that has been urged by many competing architects who do not belong to that body is equally natural. Assessors who are members of the Institute are, it is alleged, inclined to give a preference to designs prepared by one of their own number, and instances of such partiality have been shown in some cases. The *esprit de corps* feeling is strong, and may sometimes outweigh considerations of fair dealing. But let us look at the duties enjoined. The principal duty of the assessor or assessors is to determine the merits of the designs with a view of selection, or, in the terms of the revised clause (b), "To determine whether the designs conform to the instructions, and to exclude any which do not." As a matter of fact, a few recent assessors have confined their labour to selecting a design which most agrees with their own ideas and taste, not that design which conforms to the instructions—a wide difference. The revised sub-clause quoted above restricts the assessor's duty to find out the design which complies most with the conditions, not that which is in itself the best as a design. Having made conditions, the only just way is to select that design which conforms to them most perfectly, whatever the result. But many architects would rather be judged on the independent merits of their designs. There are really three ways of deciding: (1) As to the absolute merits and ability displayed, independent of instructions and individual taste; (2) as to which design conforms to the assessor's views and tastes; (3) as to which design complies most literally to the instructions. The revised clause (b) adopts the last way, and it is no doubt the most fair to competitors. Sub-clause (c) somewhat enlarges the duty of the assessors. It says: "To advise the promoters on the relative merits of the designs admitted to the competition, and to make a selection in accordance with the conditions"—certainly a wider and more comprehensive principle of selection than that enjoined previously. The clauses as they stand (b) and (c) refer to the successive duties of the assessor, first, in eliminating any designs that do not conform to the instructions, and, secondly, in deciding upon the merits of those admitted—a very just process if the instructions have been carefully prepared; but if they are faulty, some of the best designs would be excluded. For example, we may imagine a design in which the author, finding it impossible to follow the instructions on a point of planning as with regard to an ancient light or a line of boundary, is excluded under clause (b), but in other respects perfect and much better planned, while the less meritorious, by conforming to the *lex scripta* is placed first. This would scarcely be satisfactory or just. The next clause (3) is practically the same as before; it adds to the promoter and assessor any employee of either, who are to abstain from competing, and from acting as architect to the said work. There have been a few instances where this self-obvious and very just rule has been transgressed. The original clause as to the number and scale of the required drawings reads as follows: "The number and scale of the required drawings should be distinctly set forth, and they should not be more in number or to a larger scale than necessary to clearly explain the design. Perspective drawings are not necessary; but if the assessor advise that they are desirable, it should be so stated in the instructions, and such drawings should be uniform in size, number, mode of colouring, mounting or framing (if any), &c." The additional words are italicised by us. No doubt the size, mounting, or framing of drawings considerably augment, or otherwise, the effect of a set of competition drawings, and therefore uniformity in these matters should be made a condition. The three modes of advertising or inviting architects are practically the same as before: (A) By

inviting architects in the usual way, the assessors making a selection from the designs, and the author awarded the first place being employed to carry out the work; (B) by inviting architects to send in their names and recommendations, and then, with the advice of assessor or assessors, selecting (a) an architect to carry out the work; or (b) a limited number to compete, each competitor thus selected receiving a sum for the preparation of his design, the first awarded carrying out the work; (C) by inviting only a limited number of selected architects to join in a competition, each receiving a honorarium, and giving the work to the author awarded the first place. Either of these three ways may be adopted, according to circumstances and the nature of the competition. For buildings or designs of a special character B and C appear to be the best adapted to obtain individual talent. Clause 7 has been altered. Instead of the amount of premium or remuneration being fixed by the promoters, acting under the advice of the assessor or assessors, it reads "should be fixed under the advice of the assessor or assessors, and should be paid in addition to the usual professional charges, &c." There can be little objection to this alteration.

One suggestion has been made that cannot fail to arouse some objection. Clause 9 is new. It runs: "Each design should be accompanied by a declaration, signed by the competitor, stating that the design is his own personal work, and that the drawings have been prepared under his own supervision." The clause has been introduced with the object of excluding designs by incompetent men—a laudable desire. There have been instances of competition designs being prepared by "ghosts" and outsiders—a practice to be deprecated; but a great many will object to a clause which "goes behind" the architect and interferes with his professional privileges and duties. There is something to be said on both sides. We fear that the reputed authors of designs for many of our public buildings, if this rule was enforced, would be deprived of the honour. If the "personal work" condition was carried out, not all of our public buildings erected after competition could be said to be genuine works of their reputed architects. In an age of commissions unexampled given to one man to carry out, as in the case of the late Sir Gilbert Scott and several others, it would be almost impossible to enforce this condition. A great deal of the best class of work is delegated to other artists. We, however, respect the desire; it shows the higher standard demanded in architecture when compared with much that was done during the earlier and middle decades of the last century.

We refer the reader interested to the other revisions and amendments made, given in our present issue. The reasons that should be used for excluding a design ought to be clearly stated and acted upon. Exceeding the limits or boundaries of site shown by plan ought to be a reason for exclusion if the plan is accurate; so also should exceeding the stated amount of outlay by any appreciable limit; or any deficiency of accommodation, or violation of instructions. But as all these things admit of degrees, or "more or less," it is sometimes difficult to exclude a design that is generally good, if it does not conform to the letter of the instructions in one particular, and therefore a little must be left to the discretion of the assessors.

BRITISH ARTISTS AT BURLINGTON HOUSE.

THAT the Winter Exhibition at Burlington House should at the beginning of a new century be devoted to "the works of British artists deceased since 1850" is reasonable—and the half-century includes a great many illustrious names in the record of British

painting. The grand display of Lord Randolph and Lady Alington's last two years' acquisitions have increased the public appetite for works of our own school. Those selected are mainly modern pictures, Turner, who died in 1851, being among the oldest. He is represented by five pictures—a fine "Vesuvius," lent by Sir Donald Currie, in the First Gallery, showing the Conqueror, Santa Maria della Saluta and San Giorgio Maggiore, with gondolas; "Conway Castle," lent by the Duke of Westminster, a work of his earlier period; the "Wreck of the *Minotaur*," lent by the Earl of Yarborough (66), a large, well-known example of the artist's power as a sea-painter, which still outshines by the awfulness of the situation. The ship was wrecked in 1810 on a sandbank at the mouth of the Texel, and is shown on her beam-ends on the sand, a mountainous sea breaking over her, and the boats crowded with human beings; and Mr. Severn's "The Splügen Pass." With Turner's exception, the majority of the painters represented died in the "eighties" and "nineties." A few well-known men are unrepresented—men like James Ward. David Cox is represented by four works, the most noticeable being an open landscape, "Going to the Plough," in the second gallery, admirable in its fresh colour and atmosphere, "A Welsh Funeral" (61), "The Hay-stack" (118) in the Water-Colour Room.

To go through the galleries in their order would be to repeat the names of many leading men. We shall, therefore, content ourselves with mentioning a few typical examples in each, not conforming strictly to chronological order. One of the first of a remarkable group of painters which occur in the first and subsequent galleries is the name of Frederick Walker, A.R.A., whose "Bathers," painted in 1867—a river flowing through meadows, in which are boys bathing, others divesting themselves of their clothes, a picture full of movement and rich colour—is lent by Sir William Cuthbert Quilter, Bart., M.P. Another fine picture, warm in its tone, redolent of the olden time, and pathetic in its interest, is "The Old Gate" (30); it represents the gate of an old manor-house. A lady in black and a girl with basket are standing, while on the lower steps are children. In the third gallery is another picture, lent by Sir W. Agnew, Bart., "The Wayfarers" (65), charming in its pathos—a blind man being led by a boy along a country road. The ruts in the road, filled with water, tell of the autumn; the colour is warm, amber-toned, with pinkish shadows. The large picture, "The Plough," two grey horses drawing a plough, with the escarped cliff suffused in red light from the sky, is rich in colour (72), and in Gallery IV. the well-known picture, "The Lost Path," a poorly-clad woman carrying her infant, tramping through the drifts in a snowstorm, is full of tenderness as it is admirable in drawing. These oil pictures are remarkable for their insight and pathos, as well as for their colour and handling. With Frederick Walker we must associate another painter, G. H. Mason, A.R.A., who painted about the same period, and whose work is characterised by the same view of nature—full of sympathy and harmonious in composition and colour. Mason's pictures are like symphonies of colour, as in his "Harvest Moon" (19), a long composition, showing harvesters returning by moonlight, a reddish glow of the setting sun bathing the landscape; or "The Gander," a red sunset over hill (45); the smaller subject lent by the Queen, "Return from Ploughing" (47), a very beautiful composition; or his sunset "Landscape" (18), and especially in the long composition lent by the Hon. Percy Wyndham, "The Evening Hymn" (51), a group of fair country girls with sweet faces, their figures dark against the sunset-sky, singing—a delightful work, decorative in its com-

position, and tender in its harmony; to which we may add "A Pastoral Symphony," lent by Lord Wantage (60), a composition also of poetic grace and beauty. Both Walker and Mason invested everyday life with a grace and poetry of their own. We must also point to another painter of landscape, who realised the true poetry of light and shadow and colour, Cecil G. Lawson. His "Strayed" (11), a grey-toned landscape, lent by Lord Battersea, his fine "Marshlands" (59), a landscape seen through intertwined branches of trees, consisting of flat water meadows, and cattle illuminated by the early sunlight, has a freshness and sparkling effect. The handling is subtle, and the effect of atmosphere admirable. Another fine example of this able landscapist is "The Storm," in Gallery IV. (102), a work of wonderful strength. A wide, desolate heath with a tree-trunk and a few sheep receive the full violence of the storm. The dark ink-coloured clouds are drifting over, and partially obscuring the rays of the sun. There is a grandeur in the conception in this realisation of a wind-swept country. It belongs to Mr. L. Hardy. Reverting to Gallery I., we notice a touching interior by Frank Holl, R.A., depicting a family bereavement (4), subdued in colour; a characteristic landscape by John Linnell, sunset effect (9), and "From Generation to Generation," by Claude Calthrop—a long picture-gallery in which an old man and young man in 16th-century costume are pacing the gallery, a deerhound at their side. It is a fine interior: the sunlight falls on the floor through a mullioned window; the ornamental plaster ceiling and the wainscot walls and panels of portraits above are admirably depicted. Two works by John Pettie, R.A., deserve notice. The first is called "The Step" (18), and represents the interior of a room, where an old lady, seated, is watching a little girl in blue satin dress dancing. The amber tones of the room and rich colour of the accessories are delightfully harmonised. A companion picture is "The Solo," a little boy in yellow 17th-century dress beating a drum before an old gentleman in black, with ruff and black cap. Both these works, lent by Mr. H. J. Turner, exhibit a scholarly attention to costume and details. We must also mention an exceptionally fine landscape by Alfred W. Hunt, "Early Morning Mists from Loch Maree" (17). The atmosphere is masterly; and another mountain piece (21), a stream running at the bases of wooded hills—a very beautiful work—in the leafy hills and sunlit meadows. Philip H. Calderon's "Aphrodite," a full-length nude figure with golden tresses floating in a deep-blue sea, is graceful, well modelled, and rich in colour. We also note Sir J. E. Millais' "Only a Lock of Hair" (1), and Hamilton Macallum's "Water Frolic," a luminous rippled sea, with boys bathing from boats. Gallery II. contains, besides those mentioned, a sunlit landscape by John Linnell (31), "A Coptic Patriarch's House," an animated Oriental courtyard full of Bedouins, camels, pigeons, under a large tree, having much technical skill (33), by John F. Lewis, R.A.; a fine grey-toned riverscape, "A Calm Day on the Scheldt," by E. W. Cooke (35), lent by Lord Brassey; and a large picture by Sir John Gilbert, R.A., "Ego et Rex Meus" (37), lent by the Corporation of London, representing Henry VIII. leaning on the shoulder of Cardinal Wolsey in his scarlet robes. John Pettie's "Goldsmith to His Majesty" (39) is a scholarly painted half-figure holding a cup and salver, dressed in a fur-lined blue robe. Sir J. E. Millais' "The White Cockade," a lady in crimson petticoat and embroidered dress seated, trying a cockade on a three-cornered hat, and his well-known picture, "The Gambler's Wife" (44), a very graceful figure-subject, are early examples painted in the "sixties," both lent by

Mr. Humphrey Roberts. One of Albert Moore's pleasing decorative schemes, "The Quartette" (43), four musicians with stringed instruments on a stone seat, with maidens in white draperies listening, is a delicate harmony in pink and white, classical and refined in composition. His other large subject, "Summer Night," in Gallery IV., lent by the corporation of Liverpool, is a well-grouped composition of four half-draped maidens in diaphanous tissues in different attitudes, one reposing in a balcony facing the sea, decorated by festoons—a delicate harmony in pale canary and white and green, set off against a leaden grey sky and sea. Lord Leighton's "Study" of a girl's bust and head profile, with auburn hair, is a very classical face (41).

A very striking and decorative subject from a poem of Boccaccio, "A Vision of Fiammetta," by Dante Gabriel Rossetti, a three-quarter figure in red drapery surrounded by apple-blossoms, stands in the corner of Gallery III. It is a rich decorative scheme, described in one of the painter's own sonnets beginning, "Mid glowing blossoms and o'er golden hair, I see a fire about Fiammetta's head." It is lent by Mr. Charles Butler. We have described Mason's "The Evening Hymn" (51), and pass to a fine painting by Edward W. Cooke, R.A., "The Goodwin Sands"—boats in the midst of a tempestuous sea making for a wreck over which huge waves break. It is lent by Lord Brassey. The pair of delightful little girls, by Millais, one called "Pensive" (56), a dark child in yellow frock, holding a flower; and the other "Merry," a little girl in white frock and red bodice, with handkerchief round her head, holding a plate on which a canary is perched, are well-known and graceful examples, and are lent by Mrs. Cameron. The Queen sends three pictures. One of these is "No Tidings from the Sea" (61), by Frank Holl, R.A., a pathetic cottage interior, dated 1870. Next the Prince of Wales lends Sir Edwin Landseer's trio of portraits, the painter himself between two dogs, who look over his shoulders, painted in 1865. Another Landseer is Sir W. Cuthbert Quilter's "Midsummer Night's Dream" (67), the scene representing Titania and Bottom and the Fairies, painted in 1851. Turner's large "Wreck of the *Minotaur*" (66) we have noticed. "The Seventh Day of the Decameron," by Paul Falconer Poole, R.A., a scene in the Ladies' Valley, where twelve ladies are grouped, listening to Philomena accompanying her song on the harp, is striking in composition and richness of colour. It was painted in 1855. Sir John Gilbert is represented in several pictures. His "Convocation of Clergy," lent by the Royal Academy, dated 1870, shows a meeting of bishops and clergy, the former wearing their copes and mitres, while a monk is addressing them in impassioned language; also in his well-known and popular picture, "A Fight for the Standard," dated 1882. The large picture "The Melton Hunt," by Sir Francis Grant, P.R.A., lent by the Duke of Wellington, showing the meet of the Quorn hounds near Melton, was exhibited in 1839. Numerous persons are represented. A full-length portrait of the Duke of Westminster (73) in hunting costume, standing pulling on his gloves, hanging at the end of the gallery, by Millais, has been lent by the Duke of Westminster. Philip H. Calderon's interesting picture, "Her Most Noble Puissant Grace" (76), a little girl crowned and in state dress in white embroidered silk and gold, her train held up by two ladies, and a retinue of attendants and trumpeters, passing through a gallery, is a clever historical incident. The textures and costumes and head-gear of the ladies are painted with extreme technical skill. It is lent by Sir James Kitson, Bart., M.P. "The Stag at Bay," by Landseer, is another large canvas of a popular subject lent by Lord Iveagh; and we must

notice also a pleasing *genre* subject by John Phillip, R.A. (78), a group of Spanish women and a priest conversing; Millais's grand picture, lent by the Corporation of Manchester, showing Moses, with Aaron and Hur on each side holding up his arms, entitled "Victory, O Lord!" John Pettie's "Jacobites," lent by the Academy, is a remarkably well painted group, the expression of one of the Highlanders listening to the reading of an official document very true. Lord Leighton's "An Egyptian Slinger," lent by Lord Davey (83) is interesting, but does not fairly represent the painter. The work was exhibited in 1875, and represents an Eastern slinger scaring birds in harvest time. Only three of Lord Leighton's works, and those not the most representative, are selected; the other is a nice study in the Black and White Room;—very inadequate but for the fact that Leighton's pictures were brought together three or four years ago. Why so many of John Gilbert's works are hung has created surprise; but they still bear examination for their vigour in drawing and movement. Those in the Water-Colour Room such as "The Battle of Marston Moor" (145), "Battle of the Standard" (147), lent by the Corporation of London, and "Joan of Arc's Entrance into Orleans" (149), are excellent examples of his historic incidents.

In Gallery IV. we see an example of Henry Stacy Marks, R.A., in his well-known laboratory interior, "An Apothecary" (89), dated 1876, and his famous interior with old man studying parrots (92); some small studies by Joana M. Wells née Boyce (Mrs. H. T. Wells) (85, 86, 87, 90, &c.) George J. Pinwell is shown in three works. His "Out of Tune" (96), a man and woman seated on the steps of a village cross, on opposite sides, he tuning his violin, she in a bad humour, is admirable in its composition, sentiment, and tone, and may be placed with the works of Walker or Mason. His other works are "The Elixir of Love," a village-street group, in the Water-Colour Room (124), and No. 163. We see also in this Gallery "Winter Fuel" (100), a fine-painted timber-wagon in a country meadow, laden with branches of silver birch, by Millais, lent by the Corporation of Manchester, having Pre-Raphaelite tendencies, dated 1873. Pre-Raphaelitism is poorly represented by two works by Madox Brown. One, the "Coat of Many Colours" (106), Joseph's brethren showing their father the blood-stained coat, full of technical skill. The other picture is "Chaucer at the Court of Edward III." (110), characteristic of the minuteness of detail and the quaint expression of the figures, and more like a painted glass window in its colours. These pictures give us more the quaint defects and excesses of the movement than its merits. Vicat Cole, R.A., is represented by a large landscape, "Eripening Sunbeams" (113), of much beauty; and David Roberts by "Baalbec," and Bagnold Burgess by "Student in Disgrace" (114), a very beautiful interior, reminding us of Flemish work in its reflection of light and finish of execution.

The Water-Colour Room contains a few choice examples of Turner (119), also of Frederick Walker. "Spring" (140) is a delightful subject—a girl and boy gathering primroses in a wood—subtle in drawing and composition and colour. "Autumn" (136) is also extremely graceful and delicate in the touch. Sir E. Burne-Jones's "Theophilus and the Angel," a legend of the Martyrdom of St. Dorothea (138), lent by Mr. Arthur E. Street; and the beautiful series of drawings and studies in the Black and White Room (195-202), many in silver point; also Rossetti's "Beatrice at a Marriage Feast" (153) and "Paolo and Francesca" (159) are of much interest. Here, too, we see drawings of extreme finish by William Hunt (122, 123, 126), Birket Foster (115, 128), David Cox (130), Alfred W. Hunt

(137, 139), whose tendencies and poetic qualities are well seen both here and in his oil pictures. A careful study of this room and the black-and-white studies will repay all who admire and cherish the work of painters of the last half-century.

THE NEW GALLERY

THE winter exhibition of this gallery, opened on Wednesday, is representative of the works of Sir W. B. Richmond, K. B., R.A. In the hall, three galleries, and balcony the public will find collected most of the available works of this living master—portraits, decorative and mythological subject pictures, St. Paul's cartoons, landscape and other sketches in Greece and the Ægean Islands. It will be impossible here to do more than to mention a few of the more remarkable subject pictures and portraits. Whatever our opinions on the decorative compositions and mythological themes of Sir William, we cannot err in assigning to portraiture his chief place. In the South Gallery we are charmed with a number of fresh and spontaneous sketches, the results of the painter's visits to Greece, Egypt, and other countries. These are mainly direct impressions of colour, light, and shadow, landscape studies and monuments, such as the sketches of "Assisi, Umbria" (172), "Athens and Pentelicus," "Old Cairo" (167), architectural and other sketches, such as those of the "Lower Church, Assisi" (179), "The Roman Campagna," "Temple of Niké Apteros from the Propylæa" (194), sketches of the "Temple of Amenhotep III., El-Kab," "Desert, El-Kab" (208), and sketches in Algiers, Cairo, Capri, &c. The cartoons of St. Paul's decorations are interesting; we see the "Sacrifice of Noah" (297), "Study for David," "Drawing for Centre East Window" (302), "Choir Window" (303), "Melchizedek Blessing Abraham," lent by the Victoria and Albert Museum, the figures of "Charity," "Fortitude," "Chastity" (310), the "Peacock Panel" (309), "Angels of the Pendentives" (316, *a* and *b*), and a variety of other decorative panels, studies of portions of figures—head, hands, and feet of Moses—all of which have an interest. The late controversy respecting the St. Paul's decorations scarcely touched the merits of these studies.

Before leaving this room we must notice a fine pastoral, "The Valley of the Euratos," lent by Lord Davey; "The Watchers" (182), lent by Sir E. Verney, Bart., a decorative study; "The Horses of the Sun," in grey; the portrait of Mrs. R. H. Benson (164); the study of a lady's portrait, "The Flower" (220), highly finished and attractive subjects. "Sappho and Her Companion" is in a decorative key of colour and graceful in composition; but the chief work of portraiture is the very delightful group, "The Sisters," daughters of the late Dean Liddell, painted in 1864. The four girls are pleasingly grouped—the two younger are sitting and kneeling on each side of an elder sister, behind is a rocky landscape. This group is interesting as one of the principal works of the period noted for its Pre-Raphaelitism. "The Sons of Sir Henry Wentworth Dyke-Acland, Bart." (283) is another good example of this period, the expression of eyes and the grouping being pleasing.

The West Room is occupied by an array of striking portraits, groups, and decorative and mythological subjects that are convincing proofs of the painter's versatile powers and tastes, in spite of much that may be open to criticism. We can only mention a few of the portraits, such as that of "George Howard, M.P., Earl of Carlisle," lent by the Earl. The great society beauty, "Miss Muriel Wilson" (8), seen in the Royal Academy a year or two ago, is still a graceful presentment of a very charming young lady in pale salmon satin low dress. "William Holman Hunt" (6 and 10), "Miss Margaret Burne-Jones (Mrs. Mackail)" shows a pleasing face. We have also a pleasant portrait of "Miss Ellen Richmond" (5), with a background of old carved furniture and wainscot. A characteristic portrait of "William Morris" the poet (9), "Robert Browning" (7), "Mrs. Arthur Rasch" (15), "Viscountess Halifax" (18), "Mrs. Frederick Harrison" (19), "Mrs. Fuller Maitland" (21), "Mrs. Marsden Smedley" (25), "Viscountess Hood" (29), and other ladies of distinction. We also see portraits exhibited before of "The Bishop of Durham" (41), and "Bishop Lightfoot" (60). Very graceful and

charming portraits are those of Mrs. Charles Rome" (54), in grey cloak *décolleté*, and of "Mrs. L. L. L." in terra cotta low-cut dress, seated against a dark, rich Japanese background. The painted portraits are thoroughly decorative in their conception and treatment. The decorative pictures include "The Ten Virgins" (3), painted in 1881, a vestibule or colonnade of columns of not very distinct order, and the design itself is somewhat disappointing. "The Bath of Venus" (17), seen before in this gallery, is an ambitious and graceful composition of large scale. Venus stands between her attendant maidens, one of whom is adjusting her sandal, the other two in the act of covering her chiton with an embroidered robe. The colour is luminous, and the tones of amber and the sea background are harmonious. It was first exhibited in 1891. "An Audience in Athens" (38) is a colossal canvas. It depicts an assemblage during the representation of the "Agamemnon," and is lent by the Corporation of Birmingham. The design lacks somewhat in its grouping. The separated figures witnessing the performance is a difficult task; but if we take the figures individually, and their expressions, there is much to admire. "The Bowlers" (58) is a long panel, refined and decorative; and the large "Venus and Anchiæ" (59), painted in 1889, and exhibited here, is well known. One of the best mythological subjects is "Ariadne in Naxos" (95), in the North Room. The solitary figure of the Ariadne, in her incomparable draperies, amidst precipitous rocks on a bleak, dark coast, is conceived with much dramatic power. "Electra at the Tomb of Agamemnon" (127) is decorative and rich in colour. The other colossal themes in this room are "Prometheus Released by Hercules" (115), painted in 1881; "The Body of Sarpedon carried by Sleep and Death" (135), exhibited at the Grosvenor in 1879; and "Icarus Starting on his Flight," also seen at the Grosvenor in 1887. These Classical conceptions have lost their first impression, having been seen before; but they are of interest in showing the Greek feeling and taste of the painter. Other pictures in the North Room include "A Study in Gold and Blue," a young girl seated, delicate in feature and refined (80); portraits of "Lady Cavendish" (81), exhibited at the Academy in 1871; of the "Countess Carrington" (85), "Mrs. Charles Cunningham Graham" (93), a "Portrait of a Lady" (98), a yellow and gold harmony; "Miss Rawlinson" (103), a delightful group of "The Misses Cecilia, Violet, and Hyacinth Cavendish Bentinck" (105), the fine portraits of "Miss Dora Mirrles" (111), and "Miss Rose Mirrles" (119), all painted with extreme delicacy, and decorative in motive. Many of Sir William Richmond's critics have asserted that he neglects nature and reality for idealisation of form and colour. There may be a question about this. The enamel-like painting of the faces of his women, and the decorative draperies and backgrounds, the charm of the hands, and other elements of portraiture are evident. The influence of Leighton is also seen in many of the mythological and decorative subjects, as in the "Audience at Athens." But we look to the portraiture of this master as his chief *forte*, and in this he displays much subtle beauty of expression and character, careful modelling flesh tints and technical ability of a high order. We see, indeed, the influences of schools like those of Millais, Watts, and others in many of these portraits, and, if wanting in originality, they are at least often graceful and pleasing.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A BUSINESS meeting of the Institute was held on Monday evening at 9, Conduit-street, the President (Mr. William Emerson) in the chair. Messrs. Walter Aston (of Manchester), Fredrick Oscar Oertel (of Allahabad), and Thos. Bostock Whitney (of Old Jewry) were elected as Fellows, and Mr. Fredrick Milton Harvey as an Associate. The President then moved the adoption of the amendments and additions proposed by a special committee in the "Paper of Suggestions for the Conduct of Architectural Competitions."

We published the proposed revision in our issue of the 28th ult. (p. 911, last volume). After some discussion the committee's proposals were adopted, subject to verbal modifications in Clauses 2, 4, and 8, which, as finally amended,

read as follows, the additions inserted being printed in italics, and the words omitted inclosed in brackets:

2. The duty of the Assessor should be—
To draw up the particulars and conditions of the competition, and to advise upon the question of cost.
- (f) To determine (which of) the designs conform to the instructions and to exclude (all others).
- (c) To advise the Promoters on the relative merits of the designs admitted to the competition, and to make a selection in accordance with the conditions.
4. The number and scale of the required drawings should be distinctly set forth, and they should not be more in number, or to a larger scale, than necessary to clearly explain the design. *Perspective drawings are not necessary, but if they are used, they should be so stated, and such drawings, if perspective views be required, should be so stated, and they should be uniform in size, number, mode of colouring, mounting, or framing, if any, &c.*
8. Where a deposit is required for supplying the instructions, it should be returned either on the receipt of a design, or if the applicant declines to compete and returns the said instructions within a month after their receipt.

A discussion followed on the question of the status of the profession, and eventually a resolution on the subject, moved by Mr. Lewis Solomon, and seconded by Mr. W. H. Atkin Berry, was adopted in the following amended form: Resolved, that a committee be appointed to inquire into the status of the architectural profession, and to suggest remedies if needed.

THE ARCHITECTURAL ASSOCIATION.

THE fortnightly meeting of the Architectural Association was held on Friday evening, the President, Mr. W. H. Seth-Smith, F.R.I.B.A., in the chair. The following new members were elected: H. W. Clapson, C. L. Gill, H. J. Rippon, and K. D. S. Robinson.

HINTS ON THE PREPARATION OF STUDENTSHIP DRAWINGS.

Two papers on this important subject were read by Mr. R. WEIR SCHULTZ and Professor BERESFORD PITE, F.R.I.B.A., respectively. Mr. Schultz observed:—Most of our studentships of the present time are rightly or wrongly awarded on a system by which, under certain conditions, drawings are submitted in competition for the various awards. It is a matter of grave question whether this is the best method of choosing the student who is most worthy to participate in the benefits to be derived from the opportunities for study opening up by the bestowal of the prize. We must accept this for the moment as a fact, and try to consider how far the conditions can be acted up to with most benefit to the student and with the prospect of obtaining the best result.

draughtsmanship v. practical men.

During the past thirty years or so architectural students have been encouraged to worship at the shrine of the fetish of mere draughtsmanship, and they have got into the way of dividing themselves into two camps—(1) that of the draughtsman *par excellence*, and (2) that of the so-called practical man. The former have been accustomed to go about with their heads rather high in the air, and a general tone of superiority in their bearing, and to be obtrusively patronising to the latter, who have been looked upon as mere "hewers of wood and drawers of water." It was considered a much greater merit to be able to make a pretty perspective than to be capable of working out an honest, straightforward piece of construction; and this is hardly to be wondered at, when we find that the bulk of the "plums" were usually awarded, consciously or otherwise, to the most taking sets of drawings, looked upon as drawings. Many things were responsible for this, and amongst them we may place the following:—1. In the case of the Royal Academy, the fact that the architectural prizes were judged by a committee or council in which painters largely bulked, the majority of whom had little or no knowledge of architecture. We can all remember instances where thorough and careful studies were obviously passed over in favour of others which had been made purposely attractive to the body of selection, often at the expense of ignoring or depressing the essential points of the subject set for study when judged from an architectural standpoint; and, indeed, students got to expect this, and, consequently, drawings were prepared purposely with a certain superficial attraction. I well remember a hue and cry which was raised by students a few years ago when by strange

chance a really strong and original, if somewhat unprepossessing design, showing real genius in composition and construction, was given the first place over others better drawn perhaps, and worked out on more correct archaeological lines, but which did not show anything like the same sturdy grasp and powerful, strong handling of the subject. 2. I think also Mr. Norman Shaw's beautiful drawings had a potent influence on the younger generation, who seemed to lose sight of his power of composition and daring of construction in the charm of his draughtsmanship. 3. The attraction of the walls of the architectural room at the Academy also carried weight. Men knew that a pretty drawing was more likely to be placed than a clear, straightforward architectural diagram. 4. The growth of architectural competition generally likewise created a certain demand for showy drawings, and men knew that they could command a higher price for their services if they cultivated the knack of mere draughtsmanship, and so were apt to ignore the more essential qualities which go to make a good architect.

WINNING PRIZES v. PREPARATION FOR PRACTICE.

There are at least two ways in which hints can be of service to students; but they may lead in diametrically opposite directions. The first is, hints that will enable you to go in for a studentship with a chance of winning it; the second, hints that may help you to prepare your work in such a manner that you will reap the greatest benefit to yourself from the study of the subject which has been set before you. On the first I cannot venture to help you, and will leave this to my friend Mr. Pite, who in his day was fortunate in obtaining some of the most sought-after prizes, and who is now a member of one of those mysterious bodies or councils who carry your fate in their hands. On the second, I can, perhaps, give you some advice which may be of use to you, if only in the way of starting what I hope will be an instructive discussion afterwards. I assume that studentships are looked upon as purely educational—that is to say, affording the young architect an opportunity which would not otherwise be open to him for perfecting himself in the study of his art. To enable him to obtain one of these studentships certain conditions are laid down, some of which, I am sorry to say, have a considerable savour of red tape about them, and tend to hamper the student rather than to encourage him. I refer more particularly to the condition regarding size and number of sheets, scale of drawings, &c., which are in many cases needlessly arbitrary. Broadly speaking, the type of subject is of two kinds. The student may have to prepare a design for a building or a portion of a building, or he may have to submit a series of drawings, showing evidences of study of old buildings, or their accessories. The first we may look upon as an essay in design and composition, and it will shortly bear on its face the impress of the training through which its author has passed, or show evidences of the course of thought which has influenced him, but whether it will show a grasp of the sense of proportion, a constructive capacity, or an idea of fitness for a suggested purpose is very doubtful. The second will indicate that the author has visited and drawn examples of old work, or perhaps made careful and exact measured drawings to scale of an old building, church, palace, or mansion; but how far he has peered behind the surface and tried to analyse the motives which influenced the old men, or to grasp the difficulties they had to contend with and see how they overcame them is quite a matter of small moment as things are at present—probably the idea never occurred to him. In the first case, we have a set of taking drawings, a plan more or less apparently workable, the elevations designed in some phase of a past architecture, and all nicely inked in with a good deal of go, carving, and figure work, perhaps suggestively indicated, but no cohesion, no definite note of character. You look at the perspective view; the building might be suitable for half a dozen purposes—it lacks expression. In the second case you have a series of very pretty drawings with plenty of flick and dash: sketches of church towers, say, or old mansion houses, a piece of panelling or a ceiling to scale, or a church screen or font; and there may be also some sheets of coloured decoration more or less approximately suggesting the present state of the original, with all the blemishes shown to the life; but how seldom anything more! How rare to see the subjects really studied, the ma-

terials analysed, the detail and construction investigated!

draughtsmanship less essential than design.

Now, in the preparation of studentship drawings it seems to me that draughtsmanship, as such, should occupy a secondary place. It is not the first essential by any means. The quality of the paper used, the tone of the ink, the breadth of the line, the way in which carvings should be indicated, how mouldings should be tinted in. None of these things is of prime importance; undue attention to them will not make you a better architect. What you want to be able to do is to show as clearly as you can that you have made a thorough study of your subject. If it is a design for a new building, get your plan simple and straightforward; if an awkward site is purposely given, fit in your building skilfully and directly. Do not sacrifice everything to a hobby or a piece of empty cleverness. Get a sense of proportion and of dignity or homeliness, as the case may be, or both combined, into your composition. Ignore striving after effect as such. Make it apparent that you have considered the most suitable materials to be employed, and the most judicious use of them. Do not neglect your construction. Do not over-lard your design with ornament everywhere; if you want sumptuousness, you can get it by concentration more effectively than by diffusion. If it is a building for a town site, do not neglect such practical points as lighting. Do not put heavy cornices or other projections in positions where they will obstruct light and air, or where they will not be visible; do not place your sculpture where it could only be seen at an angle of 60° or not seen at all. Avoid unnecessary projections that would in reality only catch and hold dust and dirt, to be blown into the windows whenever occasion offers. Do not propose a scheme of colouring that will probably be obliterated after the first six months. Be reticent, appropriately dignified. Give your attention to these and other such points, and do not be afraid. There will be plenty of scope left for a building with character, expression, and individuality, and see that your drawings express the building and its nature, just as the building itself should express its uses. Let them be clear, straightforward, and simple. If a perspective is required, let it not be set out from an impossible point of view. Apply the same rules generally to whatever the subject may be. Leave the books alone. There are far too many books to refer to nowadays. Sit down and let your mind have free play, and think the subject out from the beginning.

SELF-TRAINING.

By doing so you are training yourself for the real work of the future, and for tackling the real buildings you all hope to erect. There will be much harder and more complex problems to face then; but you will be able to deal with them far better by overcoming the ones of the present, and whether you win your studentship or not, you should come out of the ordeal feeling stronger and more capable by having manfully faced the real issue, by having trod the narrow path and not the broad road. If, on the other hand, you are asked to submit studies of old work, go and examine the old buildings thoroughly; try to put yourself in the place of the old men who built them; realise, if you can, the conditions under which they laboured; look how they made the most of the materials to their hand, and see how they overcame their difficulties, and how sometimes they did not, and had to remedy things afterwards; take warning from their weaknesses; admire their general skill and foresight; and learn what is good to be learnt from their experience; but do not think you are going to imitate them, because you cannot if you try. Conditions are entirely different, and what was straightforward and right in the 13th century would be more often than not an affectation now; but come away, if you can, imbued with a desire to emulate them by trying in your day and generation to tackle your conditions as they did theirs, and show by the results of your study that you have grasped this. You may not win your prize, but you will have learned more than if you had done nothing but brought back pretty water-colour drawings and notes of useful cribbable detail.

ENTHUSIASM.

I do not wish to say much more now, although there is no doubt a great deal more that might be said. Do not forget that you are young, and,

being young, you have enthusiasm, which should carry you far and overcome many difficulties. Do not bury it in the slough of past styles of Italian Renaissance, of Francis I., of 13th Century, of Roman or Byzantine or Periclean Greek. Do not let yourselves be mere draughtsmen, but be men, and acquit yourselves like men, modern men, men of the new century which has just dawned. Yours will be the task to grapple with its complexities and its new problems. Try to make the complexities less complex and the problems more simple. Prepare to tackle them with a stout heart and with determination, foresight, and common sense. Do not mistake the shadow for the substance. Do not be slaves to a past which you probably do not understand. Do not study old building exclusively, but look at the works of great modern architects like Butterfield or Mr. Philip Webb, men who have learnt the useful lessons that the past can teach better than most men, but who can never be classed with the copyists or whose work can never be labelled with the tag of a dead style. They have worked in the period nearest to you, and have understood and tackled its difficulties. Where they have succeeded there is room for at least a hope that you will not fail.

STUDENTS' DRAWINGS AS EXERCISES.

Professor BERESTORD PITE commenced his address by remarking that he should take an entirely different standpoint from that adopted by his old friend Schultz. He would remind young architects that the designs made in studentship competitions would never be carried out, and that they should regard them simply as good exercises in which they could employ their imaginative faculties. In this view, the subject was a depressing one, for the student was apportioned a tantalising task, and was always labouring on the impossible, in order to develop his powers of workmanship and of thought. He would offer them a few practical hints on how to stand a chance of winning these competitions—and first as to

DRAWING MATERIALS.

It always paid to use the best materials. It was a waste of time to try to make a drawing on bad paper. The student should select a good, hard, unbleached paper that would bear scraping and rubbing, such as Arnold's, O. D., Whatman's, Joynson's, or O. W. Pencils, again, should be of fine quality—the 6d. sort, he meant, for fineness of line was all essential; a sketcher must keep a sharp knife constantly by his side, and not be afraid of using it frequently. He should never draw with an abominable H, or H H, and should not look at an H H H pencil, which was most injurious to style. An H B pencil was soft enough, except for mouldings and profiles, where the free line given by the use of the brush was best. The draftsman should accustom himself to effect a junction in all lines, a fine, continuous line being of great importance in giving effect. More valuable even than the quality of the pencil was the indiarubber, and this must be employed unsparingly. Any architect who was so accomplished that he disdained to erase a line or design once made must be a very bad designer. Rubbing out, revision, reconsideration was the test of the successful prize winner and architect. The late Reginald Stuart Poole, of the British Museum, used to say that the governing trait of Greek design was elimination; every superfluous line was refined away until the architecture would stand no more. In this respect the indiarubber was invaluable, and merited the title of "The Architect's Best Friend," given it in some clever bits which appeared in *Punch* a few years ago, from the pen of their friend, Mr. Devey Browne, himself once an architect. Having quoted the verses referred to, Professor Pite dwelt on the moral influences of indiarubber and the habit of unsparing revision of one's designs on the mind of the architect. He advised the student to get a nice soft bit of rubber, one which would not pick up dust or dirt. As to pens, he would say avoid the vicious crow-quill mapping pen, but use a fine-pointed Edinburgh; they should also try to get a good quill—now a matter of some difficulty—and learn to draw freely with this, and also with a piece of pointed stick, so as to obtain breadth of line and firmness of grip. Regarding the choice of ink, a bottle was certainly convenient to dip into, but a doubtful blessing; the fluid was perfectly black, it was true, but it did not bite into the paper as did stick ink. He would say flee the bottle and fly to the stick. Following on what he had suggested as

to indiarubber, he would advise the use of an ink that could be erased, and for an ink drawing employ the hardest and best Faber's ink eraser, and be prepared at every turn to criticise your work, and, without compunction, wash out and scratch out all failures until you are satisfied. Then as to mounting your drawings when completed. In this department any mistakes were fatal. Do not experiment with paste, starch, and glues in competition drawings; above all, do not try fish glue; in fact, do not run or take any risks of failure, but send the work out to a picture-framer's, who will carry out the mounting well. Do not go in for thin strainers, or they will buckle up when drying; but insist on stout, rigid ones, and have an eye to getting appropriate margin linings; for black and white drawings nothing is more safe than white margins. The size of strainers was necessarily limited by studentship committees on account of the difficulty of giving sufficient space for hanging; the size might well be extended. In any case, the strainers should, if possible, all be arranged one way. The writing on drawings afforded scope to the student, for it afforded a revelation of character. You could easily see by his style of printing a title that a man was an affected ass. All had sinned, he feared, in this respect, and let the younger men lay the lesson to heart, and avoid eccentricity or laboured effort. In the selection of a motto or device the competitive student had his one chance to cheek the assessor or committee. William Scott, who had since given up the practice of architecture for etching in Venice, went in for studentships without success after time, and finally selected the motto, "Choose well; your choice is brief but endless." Now just a word as to

METHODS OF FINISH.

Black inking-in covered a multitude of sins; but it was inimical to good effects, and a dead-level outline would be better. He could not understand why assessors and committees should be so afraid of being misled by the seductiveness of colour that it was expressly excluded from all competition and prize-work. Why should this be? There was a fine field and scope for careful colour in getting up architectural drawings; indeed, the whole technique ought to be artistic. If, however, colour must be prohibited to protect the susceptibilities of those who awarded studentships and premiums, he should like to see the whole sets of drawings in outline, as then they would have bolder and more vigorous work. The blacking-in of windows killed the lines of a drawing, and free etching was a mistake, as was likewise shadow tinting, as either drew the attention away from the proportioning. Having referred to the beauty of the work executed by the late George Edmund Street and John L. Pearson, the Professor remarked that in students' designs sketching was not possible, nor, indeed, could it be permissible. In other work the demarcation between sketching and the finished drawing should be very definite; the former was very attractive, but was necessarily very different from the treatment due to a work which was to be carried into execution. The two methods might, however, be combined to some extent, sketching being the mode of treatment reserved for delineating such subsidiary details as tiling and shadows. There was a great charm and delight in accurate draughtsmanship as an expression of facts. He would urge students to take an interest in drawing detail, and to strive to concentrate attention on the main lines which made the grouping of the building effective. They should not draw in the detail in thick, heavy boundary lines, but recollect that an elevation was a diagram, and that it should be dealt with accordingly. The indication of surface and material gave opportunities for revision or completeness. There were traditional methods of indicating wood, stone, brick, and roofing, and these should be studied and utilised, so that a conventional representation of the surfaces was clearly shown at the first glance. Plans could be made impressive by the simple knack of dotting. Old steel engravings were good and suggestive examples of how far the student might go in seeking for effect while treating plinth lines, pavements, roofs, &c. Sections should be designed so as to seize and make the most of the opportunities they afforded for effect. Instead of making these mere explanations of the height levels, something of the interior might very well be delineated. He would say, take the full advantage of the dimensions allowed for the strainer,

and make those the limit of the height given to the church tower or other dominant feature of the design. Much could be made also of the detail. Those who set the conditions of a competition knew what they expected in the elevation, and could realise to some extent the plan they wanted; but they were invariably hazy as to the amount and character of the detail asked for. Make the most, therefore, of this scope; let the details be boldly shown in freehand, with as much humour and enjoyment of the work as could be expressed, and with a determination not to allow the work to be killed in effect by the blacked-in windows on the next fellow's strainers. As to perspectives, the choice of standpoint was unrestricted. Why not, then, select an absolutely impossible view-point from which to draw them? A bird's-eye view might be adopted; but, in any case, be original if possible. Pace all Mr. Schultz had just said so well, let the student bear in mind that the building would never be carried out. Why not boldly aver themselves, like Disraeli, on the side of the angels? This perspective was the ultimate end of the design—all the student had been working for and leading up to—the nearest approach the design would ever have to actuality—and therefore give the imagination and fancy full play, always remembering this caution: that the design would fail utterly and irretrievably if the perspective did not agree with the plan and elevation of the design. Let the student examine a perspective drawing by Piranesi, or, better still, one of the delightful efforts of the late William Burges—say, for example, Burges' famous drawing in the *Building News* of Saint Simon Stylites, the patron saint of skylights, perched on his column—sketched from an impossible point of view, but a most delightful drawing. He, for one, regretted that coloured perspectives were now in disrepute with assessors, but he would urge students to master the art of colouring architectural perspectives. He knew this was a large order, but his friend Mr. Schultz and he were that evening addressing geniuses. Let them study the works of such men as Turner, Mackenzie, Holland, Samuel Prout, David Roberts, and Ernest George, and found their own style on sympathetic observation of their productions. In pen-and-ink work the greatest duffer with the brush or the most nervous artist was safe in an outline diagram, which was quite possible to a mere geometrical draughtsman. Let them study the work of etchers such as Axel H. Haig, who never failed in giving gradation of tone. Mr. Norman Shaw, again, had shown them a beautiful type of work, and had, indeed, founded a school. His methods were clean and effective, but he should like to know from someone who had passed through his office whether the tradition was well founded which asserted that Mr. Norman Shaw worked gently over his tiled surfaces with a T-square having a jagged edge. For foregrounds they should do as Mr. Norman Shaw did, and go to a good artist to put them in. They should study and examine the sketches by accomplished water-colour artists published in exhibition catalogues—he meant, of course, the reproduction of original sketches; for this purpose photographs were useless. It would be well, however, to purchase photographs of good tree-forms, and draw and redraw these carefully. Measured drawings were quite another class of work. He would say, make an accurate plan first; then take the line of heights to an eighth scale, and, beginning at the top of building to be measured, work downwards, putting in full-size mouldings and plotting scale sketches, and be sure not to touch the drawing afterwards. These studies were often spoiled by being retouched, and a prize was required for permanent and unaltered plot sketches completed on the spot. In measured work, all Mr. Schultz had said about construction was absolutely essential; the honest depicting of joints was indispensable. Let them bear in mind at every turn that they were not designing original work, but their single aim was to make a record of what existed; let them, therefore, reduce the work to the elements out of which it was evolved. Add nothing at home, but measure the joints in one fragment, say, 3ft. square, and give that accurately; then the work would be of permanent and historic value. Pretty pencil sketches had, like violets, their value; but do not let draughtsmen confound them with useful work. If they like, they could make sketches for the sake of the work, or for the benefit of lady friends; but in measured drawings business-

like, clear diagrams of the objects depicted were imperatively required. As to colour decoration, he endorsed all that Mr. Schultz had just said; but it was very difficult to judge of colour decoration from drawings—such were of very little value indeed. It was, in fact, difficult to translate colour from materials to paper. If they wished to study colour, let them examine actual flowers, and also ceramics and the works of the old masters such as Titian, or such a recent painter as Rossetti.

MINIS. J. J. VAN S. S. JONES—THE ART. NO. 110. STUDENTS' COAL.

As to design, students were happier far than architects in practice. They had no clients to consult, no fads but their own to consider, no arbitrary limit of cost, no threatened light and air cases, and, above all, no hurry. These were the delights of starting in life, and the chief was the freedom from carking care. He would say design for the sake of designing—build castles in the air, above all evince audacity, for this quality always paid. Begin early at all competitive work, and put the pot on soon; let them grow bolder, and work up examples; but even design fresh work, or they would not digest. Pegasus was a greedy and a lazy steed. Let them rise early and start work in the spring, when the days were lengthening, and scorn all parties, tennis practice, and like frivolities for the question in life. Above all, give unlimited time to revision of every desire. Revise—revise—revise! Refine—refine—refine! and ceaselessly seek to improve, for no architect who was easily pleased with himself would ever make his mark. Study to make work less complex: the ideal commission for the young architect was one given by a committee who had yet to collect the funds to carry it out. This allowed time for revision, and urgent reasons for cutting down the scheme. Let them remember that every problem had a certain solution, and strive to think that out. He did not believe in moments of inspiration. The man who could "knock off" anything he liked was a donkey—a man only began to feel his foot, so to speak, on his pencil after years of practice. They could not brew mystery from nothing. Let them, therefore, feed the imagination, and cultivate a master, a period, an antiquity. He had said study Piranesi and Burges, he would add give like attention to the works of Brunelleschi, Bramante, the backgrounds of Holbein, the drawings of William Blake, the works of Alfred Stevens. Above all, let them try to avoid the commonplace and conventional, and be academic and grand.

THE INDEPENDENT STUDENT.

Finally, do not care a dump what the assessors or committees do. Do what you wish and like, and not what you imagine the arbitrator seeks, and you will have your reward. In any case, you can take your revenge and justify your action by printing and publishing your design in the professional journals, and so confound the assessor or committee for want of taste. If you work out your own line, fame and opportunity will come. True, all successful students were not successful architects; there were exceptions, as, for example, Ernest George and Norman Shaw, and W. R. Lethaby, whose *début* was made many years ago in the early days of the "BUILDING NEWS Designing Club." You are not studying merely for a studentship, a prize, or a diploma; you are seeking to enter upon your profession and to open up the resources of your art—one which wonderfully exhibits the nature and aspirations of man. Enter, then, with eagerness, but actuality, enthusiasm, and completeness. Be lifted above your office routine or the baser designs you there see, and delight yourself in the cultured vision of sweetness of proportioned plans and charming surroundings, and all the grandeur of expression of which your unspeakable art is capable. Lastly, seek the joy of being fitted for the great day when the opportunity shall come, and you shall not be found wanting.

DISCUSSION.

Mr. H. L. FLORENCE, past-President, proposed a vote of thanks to Messrs. Schultz and Pite for their stimulating addresses. The first was advice to students based on Don't, the second on Do, and, although there was great difference in the form of their words, the spirit of their counsel was the same. He thought Professor Pite's suggestions would be more useful to assessors and committees than to actual students, but they

were deserving of the closest attention. He could not endorse the Professor's recommendation to make their bird's-eyes from impossible stand-points. In practice it was essential that the architect should himself be a good draughtsman, and any attempt to undervalue draughtsmanship was to be deprecated. An architect could only convey his ideas to others and even to himself by showing them upon paper. He strongly endorsed the Professor's recommendation that the student should learn to use the brush in design, for by its employment he would obtain freedom, sweep, and breadth of line—qualities especially valuable in the delineation of ornament and sculpture. India-rubber should play, as Mr. Pite had suggested, a much more important part in designing than it usually did, but he would also advocate the use of tracing-paper as most valuable, for by making an alternative design on tracing-paper you preserved a record of your original proposal for comparison. A most useful exercise for the student was to take a plain piece of paper and upon it graduate tints with a brush from perfect black to pure white. This sounded easy, but in practice was one of the most difficult things to do, and one which would afterwards be of the greatest assistance in the study and delineation of light and shade.

Mr. WALTER MILLER, in seconding the vote of thanks, observed that neither speaker had adhered to his title subject. Each had aimed not at showing the architect how to win student-ships, but how to make a design—a far more important and valuable suggestion. It enabled them all to go behind the scenes and learn how the lecturers prepared their own designs. He was old enough to remember two styles of draughtsmanship, as diverse as the two styles of Classic and Gothic. In draughtsmanship there were the schools of thick and thin line. Burges and Street were the respective leaders of these schools, and it was his fate to go from the office of one man to the other. Having seen the thick lines insisted on by Burges, and the thin ones affected by Street, he was led to see that neither mattered at all. He endorsed Professor Pite's advice to use indiarubber freely. There was a tradition in Street's office that the master never used indiarubber; but he could contradict this, for he had seen him using it. Still, he often wished it had been employed more freely, as he always felt that reluctance to revise was not an example to be followed. It was a lesson to all not to blindly follow what they saw done, but to think out each detail of practice for themselves, and do work in their own way. A great deal of what was termed "architectural draughtsmanship" was merely penmanship, and nothing more. The Professor decried and derided "pretty paint sketching." If a sketch happened to be pretty it was none the worse for that; the main question was whether the draughtsman put his own mind into the sketch.

Mr. FRANCIS G. F. HOOPER pointed out that the mastery of design, the accuracy and confidence in his own knowledge, which Street showed in his ability to draw what he wanted without alteration or revision, was the result of long years of thought and experience. It would be well for students to analyse the work of leading architects and try to find out what in it was worth emulating. Among architectural draughtsmen there was too much sketching of pretty bits, and too little measuring of old work; but he was glad to see the importance of measured work was now emphasised by those who arranged students' competitions. While designing, it was important to keep before oneself the materials, their texture and colour, and the proportion of solids to voids.

Mr. ARNOLD MITCHELL thought students ought to work on the assumption that their designs would eventually be carried out—to recommend young men to regard their design merely as exercises on paper was not sound advice. A student ought to go into a competition with a determination to win, and with a determination to leave no possible stone unturned in order to succeed. The first task for a student in undertaking measured drawings was to find a datum level. The plan he adopted, after measuring the main dimensions, was to take a short piece of board, a spirit-level, and a piece of chalk, and chalk bench marks round the building, continuing the work until the levels were exact.

The PRESIDENT, in putting the vote of thanks, said that running through both addresses was the idea that students must aim in their designs at practical work. His own experience on com-

petition committees led him to value highly the display of imaginative power as a factor in design. Professor Pite's showed incidentally the importance of keeping the teaching of architectural students in the hands of those who had had actual experience of professional work, and not to allow it to drift into the hands of mere scholastic tutors. As to Professor Pite's advice on the need for revision, if they examined Rembrandt's drawings at the British Museum in various "states," they would see how he revised and refined his work as it proceeded, and how dissatisfied he was with his own efforts.

Mr. SCHULTZ, in his reply, said it was all very well to urge students to take up a style and work in it, but the danger was that students might be like schoolboys who made Latin verses—they would never get beyond that stage. If they went in for the archeology of the art, they would never be modern in treatment. He fancied the Professor was playing up to his part in advocating at such length the use of the best materials and tools; for himself, he did not think the choice of pens, ink, paper, or margins mattered a snuff, for assessors did not regard these petty details at all, but looked at the general composition. Mr. Norman Shaw had never revealed the secrets of his wonderful draughtsmanship, but perhaps one day he would explain them.

Professor PITE also briefly replied.

VALUATIONS AND COMPENSATIONS.

VII.

COMPENSATION CLAIMS.

WHERE CLAIMS MAY BE SUSTAINED—WHERE GROUNDS SUFFICIENT TO SUPPORT ACTION AGAINST INDIVIDUAL—WHERE WORK NEGLIGENTLY DONE—WHERE RATE OF INSURANCE RAISED—WHERE HOUSE INJURED—WHERE PRIVATE ROADS RUINED—A CULMAY ON A LEVEL—WHERE ROAD LOWERED—WHERE ROAD NARROWED—WHERE DRAINAGE PREVENTED—WHERE FOUNDATION CAUSED—WHERE ACCESS TO SEA CUT OFF—WHERE STREAM CUT OFF—WHERE ACCESS TO RIVER INTERRUPTED—WHERE TOLLS LIFTED OFF THROUGH DISUSE OF FLOWING-BATH—WHERE ACCESS TO PROPERTY CUT OFF—WHERE LIGHT AND AIR INTERRUPTED—DIMINUTION OF LIGHT AND AIR—TABLE X.—WHERE CLAIMS CANNOT BE SUSTAINED—FOR INJURY BY TEMPORARY DIVERSION OF TRAFFIC—(CLAIM, HOWEVER, FOR PERMANENT ALTERATION IN CHARACTER OF ROAD—FOR INJURY BY VIBRATION FROM WORKING OF RAILWAY—REASON FOR THIS—RESIDENCE AND VIBRATION AFTER CLAIM SETTLED)—FOR LOSS THROUGH BUILDING DEFECTIVE JAR A WALL—FOR LOSS OF TRADE THROUGH PULLING DOWN OF NEIGHBOURING HOUSES FOR DAMAGE BY VIBRATION, NOISE OR SMOKE, AFTER RAILWAY OPENED FOR PUBLIC USE—FOR OVERLOOKING FROM MANNERS—FOR INJURY TO HIRSD SHOOTING—FOR RIGHT OF LIGHT OR AIR OVER OPEN LANDS—FOR TEMPORARY OBSTRUCTION TO LIGHT OR AIR BY BOARDING—FOR INJURY TO WATER OF POND, RIVER—FOR INTERCEPTING WELL-WATER—FOR INJURY TO TRIAL CROPS—TABLE XI.

WHERE CLAIMS MAY BE SUSTAINED.—One good guide as to compensation is the consideration whether the injury would be sufficient, if done by an individual, to support an action. Generally this is an excellent test.

A claim will, of course, lie where works are negligently done. But it must be shown that there is real negligence. If injury is caused, but it can be shown that works have been carried out with every precaution that modern science can suggest, no action will lie.

A claim may be made for increased premium paid to an insurance company in consequence of the increased risk caused by engines passing along the newly-constructed railway.

Injury to Goods.—Where injured by the execution of works, this forms the subject of a claim.

Crossing of Roads.—No claim where the roads are public roads, although much inconvenience is caused in consequence of putting up gates where trains are to cross a road on the level; but a claim holds if the road be a private road.

Now in this case it seems curious that compensation should lie in one case and not in the other; and yet when the reason is given it seems fair. It is that in the private road case, there is a direct injury to a person in the public road the injury is to the public, who receive by way of compensation the use of the railway. The general public have no claim therefore, and to entitle a client to compensation a special injury must be shown. It is of no use to show that he suffers only in a greater degree than the public. This makes no ground of claim.

Lowering a Road may give the right to a claim, even although the railway, the alteration of a street (or other work done by Authorities having a special Act) do not touch your client's land.

Substantial injury must be shown to entitle to compensation.

Narrowing a Road also entitles, where it can be shown that premises are thereby depreciated in value.

Abandon of Section and Drainage is also a case for compensation.

The cases that guide are—"Beckett v. Midland Railway" and "Chamberlayne v. West End Railway Company."

Changing the Level of a Brook.—This may be done by raising the level of a brook. Cases of this kind are very rare, so we will not dwell on them, but pass on to—

Cutting off Access to the Sea.—A decision was arrived at that no compensation lay in such a case, on the ground that as there was no injury to the land, *quid* land, that therefore the injury was not of a kind contemplated for compensation, although the property was greatly depreciated.

This decision has been overruled. It seems clear that premises injured should have compensation awarded to their owners. The decision of Mr. Pollock, Q. C., in the case of the Metropolitan Board of Works and the Duke of Buccleuch, on the question of loss of river frontage, shows that that which deprives a house of elements of value must be considered. It is well to remember that the Board of Works endeavoured to upset the award, but were unsuccessful.

Where, in the construction of a railway, a stream is cut off, thereby depriving an owner of its use for irrigation and other purposes, it was held that though no injunction would lie, because the Act empowered the doing the works, a remedy would lie in an action for compensation.

Ferry.—An action will also lie where your client is interrupted in his access to an ancient ferry.

Also, it would appear, where, in consequence of certain works, an ancient towing-path was no longer frequented, and the owner was thereby deprived of his tolls, an action for compensation was maintained.

This is a case that must not be too much relied on, as we do not think, having regard to subsequent decisions, that it will be the law of the future, although there is no case exactly on "all fours" with it.

Cutting off Access to Property.—This may be done in many ways, but we think the only decision is where it was done by raising an embankment.

Cases will occur to the reader where property is not only much injured, but rendered almost useless, by depriving it of access. There is a case where a railway raised an embankment opposite a house, and it was shown that the house was rendered damp and unwholesome thereby. Compensation was awarded for the injury to the house, and the loss of health of occupier. Great care is required in working up the facts of such cases, as you are nearly certain to have opposed to you those who will endeavour to show either that plenty of access still remains, or that the property has increased in value in consequence of its privacy. Remember, in fighting claims, any reasonable theory may be advanced, if it have the slightest basis on which to rest.

Interruption of Light and Air.—Fertile source of actions and injunctions.

It is most difficult in practice to decide what is a sufficient interruption to entitle a man to compensation. It has been held over and over again that it must be more than a trivial interference with the light. What quantum, then? The answer is—It must be shown that trades formerly carried on in the building cannot still be carried on—or cannot be carried on for the same length of time each day. For example, in a case we were interested in it was shown that a tailor working in the premises in rear of the shop, could not see to work by daylight so long by two hours. In this case we obtained substantial damages. We could cite other cases; but we think our readers' own judgment will guide them, if they bear in mind that the injury must be substantial, and that whether it is substantial or not may depend much on the class of trade or profession carried on at the property at the time of the interruption; which will to a great extent regulate the quantity of the injury.

Diminution of Light and Air, caused by railway works forms a claim. It cannot be pleaded that, the works being sanctioned by Act of Parliament, though under ordinary circumstances a claim would lie, the Act bars it.

Here is a point worth remembering, as it is one that will often arise. One side will contend that where it can be shown the saleable value is not diminished, the claim for admitted injury of light will not lie. It would at first appear fair that it should not, if the house will fetch as much, though injured in light. What compensation, it may fairly be asked, can be claimed in money? Yet the law apparently is, that as the injury is to the *land*, and not merely to the business carried on thereon, compensation will lie.

Having now completed the remarks upon injuries for which claims may be sustained, we propose giving the essence of them in tabular form for more convenient reference by our readers.

Temporary Diversion.—Damage for which no claims can now be sustained. By a decision of the House of Lords, no compensation can be

sustained for injury to the goodwill of a business caused by the works of a company.

Deviation and Obstruction of Road.—Where, however, a company created a new road, and so obstructed the old that their new road became the high road, instead of the former one, whereby the shops fronting the former high road were rendered less suitable for shops, it was held that compensation would lie.

Vibration, Noise, Smoke.—Let us put before our readers a startling statement. It is, that compensation may be obtained for injury from all or any of the causes that head this paragraph, provided that the injury occur during the construction of a railway; but no claim can be sustained for the same injury when the railway is opened for public use. Much diversity of opinion existed among the judges on these points, the preponderance of opinion being in favour of a claimant's right on the latter point; but on appeal before the highest tribunal (the House of Lords) the decision was in favour of the company. Such is the decision of the House of Lords; but we quote the dissentient lord in that decision that of Lord Cairns, who said that "the result will be, although clear injury and damage have been sustained, and although a substantial sum has been awarded by a jury to the landowner, that sum will not be recovered." Some may wish to know who constituted the majority against Lord Cairns. They were two only—Lord Chelmsford and Lord Colonsay. It seems right that it should be so. If Parliament give a company the right to make a railway, the right ought to carry the freedom to properly work it. It must, however, be borne in mind that this freedom is very limited; as we have shown that many injuries consequent on the formation of a railway form proper and sustainable claims.

When a claim was made and decided, and afterwards another claim was made for subsidence and vibration, it was held it was *too late*. That as it could have been discovered it was likely to accrue, it should have been included. It was disallowed in consequence.

No claim where company pull down house and party-wall, such cases being under the provisions of the Building Act.

No claim where company pull down the houses in the neighbourhood of a claimant's shop, thereby causing loss of trade.

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Amenities of Premises.—No claim can be maintained by reason of persons standing on the bank of a railway and overlooking premises. It is not considered sufficient injury to warrant a claim.

Shooting.—No claim will lie for injury hereto. This is a claim we sometimes have to deal with, and it is well to be able at once to tell your client that the mere hiring of such a right does not give such an interest in the land as will entitle him to compensation.

No rights of light or air exist over open land. No compensation will lie for injury from temporary hoarding used in the course of doing works.

It would appear, however, that it must not be kept up beyond a reasonable time, or an action will lie.

Water.—It will appear curious to some, that injury to water is not always a sustainable claim. The case deciding this is one where the owners of a brewery brought an action for injury of the water of a public river from which, by means of pipes at a level below low-water mark, they had always drawn their supply. The judgment was to the effect that the use of the water was common to all, and that, therefore, the only remedy, if any, was by indictment.

This remedy of indictment is very difficult to enforce, and it is expensive; therefore, if companies can reduce a claim to this basis of action, they are successful, because, in a large majority of cases, there will be no further proceedings taken against them.

It would appear that no action will lie for intercepting water, which otherwise would have percolated through the earth into the claimant's well.

The result of the several decisions may be thus summarised:—No claim for water in the earth, but claim for injury where the water is flowing in a defined channel. But no one has a right to contaminate water from a common source which everyone has a right to appropriate.

We will here mention a curious case:—A claim was made for special injury by reason of some trial crops being taken with the land, whereby the owner was unable to identify such crops with the seed in bulk; and being unable to warrant the bulk, the seed was depreciated in value. The claim for loss was disallowed.

We will now give an abstract of the foregoing remarks in the form of two tables:—

TABLE X.

Showing what claims are sustained.
Where ground sufficient to support action against individual.
Where work negligently done.
Where rate of insurance raised.
Where goods injured.
Where private road crossed.
Where road lowered.
Where road narrowed.
Where insufficient drainage.
Where level of brook raised.
Where access to sea cut off.
Where stream cut off.
Where access to ferry interrupted.
Where tolls depreciated.
Where access to property interrupted.
Where interruption of light and air.
Where diminution to light and air.
Where deviation and obstruction of road.
Where vibration, noise, and smoke, if during construction.
Where injury to water in a defined channel.
Where contaminating water from a common source.

TABLE XI.

Showing what claims are not sustained.
Where traffic temporarily diverted (claim, however, for permanent alteration in character of road).
Where injury from vibration from working of railway after completion.
Where subsidence, noise, and vibration after claim settled.
Where loss through rebuilding defective party-wall.
Where loss of trade through pulling down neighbouring houses.
Where property overlooked from embankment.
Where hired shooting injured.
Where right of light or air over open lands affected.
Where light or air temporarily obstructed by hoarding.
Where water not flowing in a defined channel injured.
Where well-water intercepted.
Where trial crops injured.

"BUILDING NEWS" DESIGNING CLUB

A WAYSIDE HOTEL.

THIS scheme is somewhat more ambitious in its scale and requirements than we are accustomed to in the competitions of our Designing Club; but if it consequently has taxed the ingenuity of our contributors, the exercise may be said to have afforded a good opportunity for the display of ability and skill in planning. We are aware that, by introducing a subject of this character, the less enthusiastic members of our Club are more or less likely to drop out of the running. On the other hand, notwithstanding a very good set of plans has been submitted both as regards number and quality. Fair weather workers are not expected to do more than pick and choose, and we can hardly expect the rising ranks of the architectural profession to be headed by such as these. We none the less give credit to those who have sent in designs for the Wayside Hotel, and if we find fault with some details of their proposals, it is, after all, only for the competitor's advantage. The following were the conditions:—

B.—A Wayside Hotel in a small market-town, providing accommodation for cyclists. The site at the street corner, which is a right angle, faces south, with a return frontage 180ft. long on the west side. The main street front is 100ft. wide, and on the east side of it are buildings, so that no light can be had from that boundary line. The stable-yard will be located to the rear or north part of the site, and have an entrance in the west street. The hotel entrance is to be placed towards the middle of the west street elevation of the hotel, and the entry is to be through a 10ft. archway leading into a little courtyard with fountain in centre; out of this courtyard a six-foot way is to lead to an inclosed cycle-standing with numbered and locking racks

for 24 machines, including tricycles. The hotel to have a front about 11 ft. square, with adjacent inquiry office and bar, and private room beyond for manager's use. The coffee-room to be 25 ft. by 18 ft.; a commercial room of similar dimensions; a smoking-room of the area of 20 ft. square; a dining-room 30 ft. by 20 ft.; and a billiard-room for two full-sized tables, a ladies' parlour, 12 ft. by 12 ft., with cloakroom attached, and lavatory and two w.c.'s to be provided *en suite*. The gentlemen's cloakroom, lavatory, and conveniences (three w.c.'s, four urinals, and four lavatory basins) are to be placed with due regard to ready access and isolation in all cases for sanitary considerations. The service department to include a kitchen, 20 ft. by 15 ft., two sculleries, two larders, a pantry, a store-room, and a servants' hall. Boots and knife-room. Two stables with four stalls, and loose-box each, a coachhouse, harness-room, and men's room with a fireplace. A w.c. and four-stall urinal in yard, with small dung-pit for one day's working only. Bay-loft over part of these buildings, and three rooms and offices for married coachman in charge. In the basement of hotel two good wine-cellars, a beer-cellar, and to it a rolling way. Two suites of private rooms for guests on first floor, each consisting of parlour and two bedrooms. Fifteen other bedrooms for guests and four bedrooms for servants. Part of this accommodation may be on second floor; three bathrooms, one housemaid's closet; four w.c.'s for guests, one being located for ladies' use; one w.c. and one bathroom for servants. The manager to have a set of rooms, comprising one sitting-room, two bedrooms, bathroom, w.c. This set to be approached by separate staircase. A pass-door from manager's landing to hotel corridor to be provided. Ample light and air essential to all rooms and passages, which are to be straight, if possible. A good staircase desirable. Scale 10 ft. to the inch for elevations and sections. Plans may be drawn to 20 ft. to the inch, but larger desirable if space will allow. Three plans, two elevations, and one section necessary. A view desirable. Size of sheet of paper 25 in. by 18 in. Style of building English Renaissance. Early in type, with stone-coped gables and tiled roofs. Materials, red brick and stone dressings.

We place "Dan" first, "Thums" second, and "Jove" third. "Dan's" plan appears to realise the best arrangement of rooms of any scheme submitted. It is more simple than most of the designs, and displays thought and care. The second entrance is an advantage, though it would have been better to have omitted the doorways from the dining-room and ladies' parlour into the porch. Farmers who would patronise such a house on market days would be of a superior class, who would in the majority of cases require to wash their hands before proceeding to the "ordinary." A cloakroom would have been an improvement. The conditions named such a convenience. As it stands, the lavatory is capable of much improvement. The billiard-room is not very well lighted, more particularly at the entrance end of the apartment. There is no perspective, properly speaking; but the sketch of the entrance porch in the courtyard gives an idea of the author's intentions. We are not unmindful of the absence of a regular view of the building; but, in spite of that, we consider "Dan" exceeds the merits of "Thums," though they have a somewhat kindred character architecturally. "Dan," on the whole, is the better of the two, and the balance of the parts in the south elevation placed first is rather satisfactory. The local authorities would not, however, allow the bay windows to project on the pavement as shown. The arched entrance hardly suggests the main approach to the hotel as it should do. This doubtful effect is due to the entrance proper being located out of sight on entering the archway. A stranger might hesitate, mistaking the quadrangle for a stable-yard. If a customer hesitates he is in all likelihood lost. The passage next kitchen would be none too light, and we are not attracted by the marginal note with reference to the w.c. and meat-larder located in close proximity in the basement. "Thums" has left out the main front gable in his elevation of the west front, where the south roof is shown hipped. This may be only a detail, but it is noted. The public-house bar at the angle of the two streets is no doubt good for a counter trade; but in an hotel of this character the tap should be more modestly located. The projecting oriel over the bar entrance emphasises the angle; but we hardly

like the squatly proportioned windows hard by on the ground floor. The commercial-room entrance is better, but the silly little bar between the commercial-room and the billiard-room—placed, too, as it is—would never do. The kitchen is not nicely contrived leading out of the gentlemen's corridor from the billiard-room to the coffee-room. The entrance-hall has its advantages running up through two floors; but the doorway is cramped, and the approach to the dining-room and the coffee-room is extremely awkward. The courtyard is too confined, and the areas are not satisfactory. The building, as a composition, is wanting in concentration of idea, and, as a plan, the same fault is conspicuous.

"Jove" sends a mechanical-looking drawing of a carefully worked out scheme, which is wasteful in corridor space and passages, with a disjointed arrangement of rooms, divided by the quadrangle, necessitating four entrances, furnishing a fatal objection, of course; and, had it not been for the elevations, which have more merit than others which follow in order, we should not have placed "Jove" third. The loggia arcade in the quadrangle is pretty, and the proportions outside the hotel have a quaintness. It is doubtful if the by-laws would allow of the projecting oriel turret at the junction of the two streets in any ordinary market-town. "Pierrot" has faced this difficulty by receding the adjacent walls towards the corner of the block, and thus gets an equally distinctive feature in the form of a many-sided bay, making practically a sort of squat tower. His plan, however, is unequal, cut up with areas, and a very small courtyard. The details of his scheme are good in very many respects; but the arrangement is too confused-looking to constitute a good plan. His drawings are workmanlike and careful. The façades have merit also, which we have not failed to notice, particularly the care in grouping individually certain sections with a thoughtful contrivance of the windows as in the south front. Taking the design as a whole, it lacks some emphatic feature to pull it together as a composition. "Robin Hood" has a sense of what we mean by gathering his gables into a picturesque arrangement; but this is spoiled by the clumsy insertion of the chimney growing out of a kind of ingle from the commercial room. This break in the front, had it been more skilfully managed, would have been an advantage, giving a contrast to the balancing gable at the other end. The octagonal courtyard is ingenious, but the three entrances are more than a doubtful arrangement;—indeed, as an hotel, the scheme is excessively poor. "Gow Chron" sets his return front boldly back with a turfed space in front, making a somewhat successful proposal; but it is spoiled by the ugly and confined areas dodged in at the rear to get light for the ground floor. The space is greatly wasted in corridors and passages. The cycle store is reached by a narrow slope by the side of the chief entrance to the hotel. Externally this design is one of the best, but the perspective is a poor performance. The author displays ingenuity and considerable merit, but has not recorded so great a success this time, as he ought to have done, judging by his elevations. "Sundial" sends an ordinary-looking scheme with ugly gables and overpowering chimneys. The plan has a regulation type and commonplace style about it; but, none the less, there is a directness of idea which we cannot overlook. The hotel entrance is too unimportant and cramped. The long passage by the side of the leading apartments would be none too light, and the scheme is lacking in facilities for ready supervision. "Pat McKann" has an idea based on Georgian models. The pity of it is that the original notion has not been adequately worked out. As a plan his scheme is faulty. The main entrance leads almost immediately into the billiard-room, and the entire arrangements are too mixed, and appear to be the result of mere chance. The author does not do himself justice. His plans are wanting in study, and his drawings lack grace and care. "Oobam" distinguishes his design by two gateway towers with plain shaped stone parapets above, without copings or weather-drips, so that if built, the masonry would speedily become very striped by water-stains. The plans are rather more convenient than the last, but the building is devoid of any serious attempt at compactness, and a notion of hotel requirements is looked for in vain. The elevations, if we omit the turret oriel with its paltry roof, do not offend good taste, though they do not seem to have been inspired by originality of idea. This impression

is not lessened by a reference to the perspective. Dutch gables are used by "Vignoria," whose elevation and view are drawn in outline. The problem is not an easy one, but "Vignoria" has not helped forward its solution very much, notwithstanding his care and neatness. He ought by now to rank higher than this. "Rush" draws as if he had no time to work properly. He sends a mounted tracing, which is not allowable. His plan is one of the best, though his corridors would be defective from lack of light. The elevations call for no special comment, though we may add that the perspective fails to commend the design to our approval. "Cambria" is extremely neat, and has spared no pains. We regret not to be able to locate his design higher in the list. The plan in some respects is well thought out, but the bar for casual custom so prominently placed under the archway spoils the approach to the hotel, and the main door is too much out of sight poked away in the corner of the courtyard. The servants' hall door is very much more in evidence. We praise "Cambria" for the straightforward massing of his walls and distribution of his conveniences. Three sheets are used instead of one, which spoils all chance of reproduction. "Scottie" spends his space on huge lettering, and cramps his plans in a very small space. We cannot admire his façades. The stable-yard and courtyard are thrown into one. "Mate" comes next with a well-considered set of plans, most carefully inked in, and with the lettering nicely printed. The entrance is mean and unworthy of a good tavern, while too much is made of the bar business. "Corinium" comes next with a curiously composed design, unmistakably a "pub." with the bar entrance cheek by jowl with the archway leading into the central quad, where the hotel proper doorway is pinched up right round to the left. "There's 'Air" is not a success, but he has tried hard, and with more study of good work will do better, for we notice some notions of taste here and there in his design; but his plan is crude to a degree. "Smugimugh" has adopted a title which may be said to describe his design, which might pass muster as an "Elizabethan" house of the pattern-book villa type. He must not think we are writing too harshly, and we note some merit in his plans, but the design does not look in accord with a market town. The other designs rank as follows:—"Quiz," "Alpha," "Perseveranza," "St. Giles," "Brutus," "Alpha" (Liverpool), "Cronje," "Iolanthe," "Maori," "Pompey," "Gargoyle," and "Apex."

PROPOSED CATHEDRAL FOR LIVERPOOL.

AFTER having been discussed at intervals for a number of years, the question of providing a cathedral worthy of Liverpool has again come prominently to the front, and is now seriously occupying the attention of a body of well-known gentlemen, who have been brought together at the instance of the present bishop of the diocese, Dr. Chavasse. Some time ago a committee was appointed to consider matters with reference to formulating a cathedral scheme; but later it was found advisable to intrust to a smaller committee the important matters of site and, as far as possible, plans, &c., with the object that they would carefully consider and report thereon to the larger body. On this executive committee the bishop secured the services of Archdeacon Madden, Sir W. B. Forwood, Mr. John Branker, Mr. A. L. Jones, Mr. Richard Dart, C.C., and Mr. R. A. Hampson, C.C., and these gentlemen met at the town hall, Liverpool, on Monday, the last named acting as secretary. The proceedings, which extended over a couple of hours, were conducted in private; but the *Liverpool Mercury* states that the question of a site was discussed at length, as also were plans, which were laid before the committee; and, generally speaking, matters were advanced materially. The next step will be to place the proposals arrived at before a full committee, and in all probability the scheme then decided upon will be made known to the public, and their co-operation invited in carrying out the project.

A Local Government Board inquiry was held at the Catford Town-hall last week relative to the application of the Lewisham Borough Council for permission to borrow £5,000 for the erection of a public library.

OBITUARY.

MR. GEORGE SMITH, at one time a well-known exhibitor at the Royal Academy, died on Wednesday at his residence in Meida Vale, in his 72nd year. After passing through the Academy schools, he was engaged by the late C. M. Cope, R.A., as an assistant in executing some of the frescoes for the House of Lords; but he soon became known for his pictures, mostly of cabinet size, more or less in the manner of Wilkie and Webster. The Prince Consort purchased one of his early works, and there are several in the Sheepshanks collection at South Kensington. Mr. Smith latterly was chiefly known as a connoisseur of old pictures, of which he formed a collection, which was sold some time back at Christie's.

THE death occurred on December 14 of GEORGE W. PERCY, architect, of San Francisco. He was born in Bath, Me., in 1847, and spent his early life on a farm. Afterwards he made several sea voyages, but finally decided to become an architect. After studying in the East he went to California in 1876, and very soon designed a number of public buildings which established his reputation for good work. Among the notable buildings of which he was the architect were the museum and library at Stanford University, and the Academy of Sciences and the Wells-Fargo Building in San Francisco, and he also carried out many residences and business blocks in the State. His care in constructional matters was justified by the uninjured condition of the Wells-Fargo Building after the severe earthquake which occurred in San Francisco a few years ago. He looked upon concrete as a building material in a very favourable light, and probably used it more extensively than any other architect in the United States in proportion to the extent of his practice.

THE death occurred at Stoneycroft, Liverpool, on Sunday, of Mr. WILLIAM CULLAGHAN, who was for nearly half a century connected with the building trade of Liverpool. Born in the year of the Battle of Waterloo, he had just entered his 86th year, and was remarkably active up till quite recently. He was long a prominent member of the old West Derby Local Board, having filled the chair during his period of service. His connection with the Master Builders' Association extended over many years. He was one of the oldest of the Freemen of the city, having been on the register since 1836.

At the Council House, Birmingham, on Tuesday, Colonel W. Langton Coke, an inspector of the Local Government Board, held an inquiry in reference to an application by the Birmingham City Council for sanction to borrow £35,600 for the extension of the Smithfield Vegetable Market.

The New Sanatorium, Malvern, is being warmed and ventilated by means of Shorland's patent double-fronted Manchester stoves with tiled sides and with descending smoke flues, patent exhaust roof ventilators, and special inlet ventilators, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

The Leeds Board of Guardians have appointed Mr. Thomas Winn, of that city, their architect for the extension of the workhouse infirmary.

A new theatre is being erected at St. Helen's, Lancs, and special attention has been given to the ventilation, which will be carried out on the Boyle system.

A receiving order has been made in the case of Sidney Muggridge, of Clapham Park-road, S.W., architect and surveyor.

The Peterborough Cathedral Restoration Committee announce that the funds at their disposal are entirely exhausted, and that the work must be stopped pending the receipt of further subscriptions.

A receiving order in bankruptcy has been made in the case of Arthur Watson Stonebridge, of Portland, civil engineer and architect.

Messrs. Ashwell and Nesbit, Ltd., of London, Leicester, and Nottingham, send us a well-executed wall date-indicator for 1901, exhibiting an excellent illustration of the Grosvenor Hotel, which is heated by their steam and atmospheric pressure system.

Mr. John Bayliss, of Milverton, Ryde, Isle of Wight, formerly of Westergate House, Kingston-on-Thames, retired contractor for public works, who died on December 4 last, aged 74 years, has left personal estate of the net value of £256,630.

There has been an extensive landslip at Frinton, near Walton-on-the-Naze. Hundreds of tons of the cliff have fallen into the sea, and other sections of the cliff have been loosened.

COMPETITIONS.

EXETER.—In the recent competition for the proposed new B.C. Methodist Church and school-buildings at Exeter, twenty competitors responded, and the trustees appointed Mr. James Crocker, F.R.I.B.A., of Exeter, their assessor. In accordance with his award, the first position has been given to Mr. A. J. Dunn, A.R.I.B.A., of Colmore-row, Birmingham, and St. Michael's-square, Gloucester. The work is not likely to be commenced for some time.

GLASGOW ROYAL INFIRMARY RECONSTRUCTION.—The following are the authors, also the approximate cost of carrying out the respective designs, as intimated by Mr. Robert Whiteon, the committee's measurer:—

(A) Sydney Mitchell and Wilson, Edinburgh	£20,000
(B) Hippolyte J. Blanc, Edinburgh	26,000
(C) Malcolm Stark and R. Swinton, London	25,000
(D) John James Burnet, Glasgow	21,000
(E) James Miller, Glasgow	24,000
(F) H. E. Clifford, Glasgow	28,000
(G) H. Percy Adams, London	24,500
(H) A. Hessel Tiltman, London	32,000
(I) Campbell Douglas and Morrison, Glasgow	25,000
(J) T. L. Watson and H. Mitchell, Glasgow	25,000

Plans marked (E) have been adopted by the committee as first in order of merit by 11 votes to 10 given for those marked (F). The following is the report of Dr. Rowand Anderson, Edinburgh, the assessor to the committee:—

16, Rutland-square,
Edinburgh, 9th November, 1900.

Gentlemen,—In this competition ten architects have sent in plans: two of them have sent in alternative designs, making 12 sets in all, 158 drawings. I have gone over in detail each individual plan, and compared the accommodation given with the specification of requirements, and, generally speaking, all that has been asked for has been given, but, of course, in different ways. As the committee have instructed competitors that a pathological institute need not necessarily be included in the plans, my observations will be limited to the infirmary proper and the isolation wards. Each design is illustrated by the floor-plans of the different buildings and elevations of the façades, all drawn to a uniform scale, as stipulated for in clause 5 of the terms and conditions of competition. Separate drawings, in accordance with clause 9, showing the method of heating and ventilating, have been submitted by all the competitors except the author of design marked H. Each competitor has submitted a descriptive memorandum and estimate of the probable cost. The competitors have, with the exception of B and D, complied with clause 12, asking that the facade of the south block should be, by the character of its architecture, commemorative of the Diamond Jubilee of Her Majesty the Queen. B and D have no south block, but a large court. In design B the whole court is treated in an important architectural manner. In design D there is no distinctive part of the court treated in an important architectural manner; but there is shown in the centre of the court a statue of Her Majesty. The plans submitted by the committee have been more or less followed by some of the competitors, while others have entirely departed from them. Designs E and F may be taken as examples of closely following the committee's plans, while designs B and D are an entire departure from them. After a careful and exhaustive study of each design, I placed on a short list designs A, F, H, and J. In bringing to a focus my opinion of the relative merits of these designs I have kept specially in view:—

- 1st. Careful planning, with adaptation to site, and to the amount of sunlight the buildings would receive.
- 2nd. The manner in which the plans lend themselves to the reconstruction of the new infirmary.
- 3rd. The architectural treatment of the building, and especially of the south front, as a commemorative memorial of the Queen's Diamond Jubilee.

I conclude to place F first, H second, J third, and A fourth.—I am, yours faithfully,

R. ROWAND ANDERSON.

As we stated last week, the design (E), by Mr. Miller, of Glasgow, has been determined on by the authorities.

HULL ROYAL INFIRMARY.—The following architects have been selected to compete for the reconstruction and extension of the Hull Royal Infirmary:—Messrs. Freeman, Son, and Gaskell, Hull; Messrs. Botterill and Bilson, Hull; Mr. B. J. Jacobs, Hull; Messrs. Worthington, Manchester; Messrs. Simpson and Allen, London; Messrs. Roger Smith and Son, London; Mr. H. Percy Adams, London; and Mr. W. A. Pite, London.

SWANSEA.—The Swansea Harbour Trust new offices competition has proved popular to this extent, that no less than 97 sets of plans have been submitted. The cost of the undertaking is limited to some £12,000. One item in the conditions is that the fee of 5 per cent. to be paid to the selected architect shall include travelling expenses and all attendances at meetings of the trustees and committees, the premium of £100 to merge in the commission. Mr. W. M. Fawcett, M.A., F.S.A., of Cambridge, has, on the nomination of the President of the Royal Institute of British Architects, been elected assessor in this matter, a choice which will commend itself to those taking part in this contest.

LEGAL INTELLIGENCE.

MIDLAND RAILWAY COMPANY v. JACKSON.—Mr. Thomas Taylor Wainwright, of Liverpool, the umpire in this matter (property Canal-road, Valley-road, and Mill-street, Bradford), which was heard in Bradford on October 2 and 26, 1900, has issued his award. The amount of claim was £45,051 5s. 6d., and the Railway Company's valuation was £23,797. The award is £29,571. The arbitrators were: for the claimant, Mr. Jas. Lodingham, F.R.I.B.A., of Bradford, and for the Railway Company, Mr. Frederick Fowler, of Sheffield. This property is acquired under the Midland Railway (West Riding Lines) Act, to construct railways from Royston to Huddersfield, Halifax, and Bradford.

THE ANTIQUE FURNITURE MERCHANTS' CHIPPENDALE ENIGMA.—At the York County-court, on Friday, his Honour Judge Temperley concluded a partly-heard action in which James Hargreave Mawson, surgeon, 43, Holgate-crescent, York, sued F. Wright, of Kipton, Grantham, for £18, the value of Chippendale mahogany furniture supplied, consisting of two tables and six chairs. Plaintiff advertised some Chippendale furniture for sale, and defendant agreed, by letter, to purchase the tables and chairs. They were sent to his house, but he was not satisfied, and he returned them to the plaintiff. The defence was that the goods were sent on approval; but his Honour decided against that contention. There was a second defence that the furniture was not Chippendale, but was an imitation of that style, and the evidence on this point was of an expert character. A cabinet-maker and furniture dealer named Beckett, of York, said the articles were genuine Chippendale, and evidence of a corroborative character was given by Arthur Arundel, antique dealer, York. On the other hand, a witness named Millard, engaged in the trade at Grantham, said the furniture was not genuine Chippendale, but was what was known as "faked." Another dealer named Alingill, of York, said he should not describe the furniture as genuine old Chippendale. His Honour gave a verdict for the plaintiff.

CHIPS.

Messrs. Wm. Potts and Sons, clock manufacturers, Leeds, have just completed a new large turret clock for St. John's Church, Ealing, W., showing the time upon three external dials, 7ft. 6in. each in diameter, and striking the hours, to the entire satisfaction of the vicar, churchwardens, and committee.

Mr. John Robert Withers, architect, formerly of Shrewsbury, died at Church Stretton, on the 3rd inst., in his 41st year.

Mr. William Matthews, head of the firm of Sir John Coope and Son, one of the newly-created C.M.G.'s, is a Penzance man, the son of the late Mr. John Matthews, for many years borough surveyor of Penzance.

The works committee of the Edinburgh and District Water Trust have unanimously resolved to recommend the appointment as engineer of Mr. W. A. Tait, C.E., who has been acting as interim engineer since the death of Mr. Wilson. The recommendation is that he should be appointed on the same terms and under the same conditions as held good with Mr. Wilson; and, further, that he should keep and maintain a competent engineer or engineers on the Talla Works at his expense, and to the satisfaction of the trustees.

The chairman of the housing committee of the London County Council, accompanied by Mr. W. E. Riley, superintending architect to that body, visited Liverpool on Wednesday to inspect the Corporation's workmen's dwellings.

The death occurred last week, after a short illness, of Mr. Henry Trelawny Boodle, the agent of the late Duke of Westminster's London estates.

The Amalgamated Society of Engineers reached the 50th anniversary of its establishment on Sunday, the amalgamation of a number of engineering trade unions having been effected on Jan. 6, 1851. In celebration of the jubilee the society has, at a cost of some £12,000, acquired a freehold site and built commodious offices. These premises were inspected by a numerous company on Saturday.

At the Central Criminal Court, on Tuesday, before the Recorder, Henry Capon, 31, pleaded guilty to forging endorsements on cheques, and also to forging orders for the transfer and delivery of quantities of timber. The prisoner had been in the employ of Messrs. Farquharson, Brothers, and Co., timber merchants, Gracechurch-street, E.C., and the total amount of his defalcations was stated to be £1,600. He was sentenced to five years' penal servitude.

The result of the poll of the city on the Bristol docks extension scheme was declared on Tuesday. There were 25,251 in favour of the scheme and 9,377 against.

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ILLUSTRATIONS.

ROYAL INFIRMARY, GLASGOW.—"A PROCESSION OF THE HOURS"—DESIGN BY A. H. WATSON.

Our Illustrations.

THE RECONSTRUCTION OF THE ROYAL INFIRMARY, GLASGOW: DESIGN PLACED SECOND BY THE JURY.

We illustrate to-day the design submitted for the above, by Mr. A. Hessel Tiltman, F.R.I.B.A., Russell-square, London. The competition was a limited one; ten architects, or firms of architects, being invited to compete. Seven of these were Scotch practitioners, and three from London. Dr. Rowand Anderson was the assessor, who, in his award, we understand, placed Mr. Tiltman's design second in point of merit. The scheme was one of great interest, involving, as it did, the pulling down entirely of the present infirmary, and erecting upon the site a thoroughly up-to-date building in arrangement and appointments. The accommodation required for the reconstructed buildings was 650 beds, divided as follows—viz., 225 on the medical side, 300 on the surgical, and 100 for special diseases. These were to be distributed into five medical services of 45 beds each = 225; six surgical services of 50 beds = 300; and about 100 beds for diseases of women, throat and nose, skin, venereal, burn, isolation, and emergency cases. The site, a very fine one, situate close to Glasgow Cathedral, was very restricted in its extent, necessitating the adoption by all competitors of six stories of wards generally throughout. The author of the accompanying plan endeavoured to avoid the parallel arrangement of pavilions, the area of the site not permitting of sufficient distances between the six-storied pavilions; hence the nature of the general arrangement of the scheme now illustrated. Each ward suite has its zone of aeration, the administration of the whole establishment practically being concentrated in the central longitudinal block. It being desired to utilise the southern portion of the establishment in the commemoration of the Queen's Diamond Jubilee, due effect was given by the projecting circular ward, with its twin towers and colonnade upon the ground floor. One of the fresh departures in the new hospital is the provision of some seven or eight operating theatres each visiting surgeon having his own separate theatre, out-patients' room, test-room, laboratory, &c. In a similar manner separate lecture theatres have been provided for five visiting physicians. Each service throughout had suitable apartments for the house surgeon or physician, as the case may be—in each case closely adjoining the respective services. Mr. Hessel Tiltman had provided in the basement a special arrangement of medicinal baths, derived from the best German examples; whilst every attention had been paid to the now necessary electrical department, and a gymnasium for orthopaedic cases. Very liberal accommodation was provided as required for dining and billiard rooms for the resident doctors; mess and sitting-room accommodation for the nurses and the male and female servants. A very important provision comprised the working and store-rooms of the following departments: Linen-rooms, dressmaking, mattresses, and the Dorcas. The general kitchen and its accessories were placed in what in the

front is a basement story, but which at the back stands clear; the tradesmen's entrance being through an archway under the easternmost sanitary towers of the male surgical wards suite. A committee room, superintendent and matron's suites of offices, journal-room, a chapel, were provided in the central administrative block. The present laundry was in this scheme simply extended, with new boilers, incinerator, and disinfecter. The plans generally, with this information, will explain themselves. The ear, throat, and nose, emergency, and isolation wards are of one story only above the ground floor. The exterior design has been advisedly kept somewhat severe in character, and its style and architectural proportions are in contrast, so as not to suffer by the juxtaposition of Sir Gilbert Scott's work. The estimated and complete cost of this scheme was stated by its author to be £297,765.

"THE HOURS": ROYAL ACADEMY PRIZE DESIGN FOR THE DECORATION OF A PUBLIC BUILDING.

By "Hours" the ancients understood the Seasons; this idea is realised in the design by a procession of maidens representing the twelve months. The rise and decline of the year is, for the most part, symbolised by the colour of their garments, which is sombre at the beginning, becomes richer and brighter as Spring advances, and fades away into greys and browns as Autumn passes away and Winter reappears. Most of the figures, however, are also accompanied by appropriate emblems. On the left, January drags her cloak of ice and snow from the earth and turns towards the advancing year. In her hand February shelters a snowdrop from the cold wind of March. April extends her hands to the showers, and May half turns, arrested by the touch of Love, represented as a flying boy with the wings of a swallow. June and July are listening to the song of the nightingale; while August walks slowly, turning half-regretfully to the coming Autumn. September plays a lyre, and October close on her heels listens with closed eyes to the music of the past month. November, carrying the now sleeping Love in her arms, quietly awaits December, who advances upon her with outstretched hand and icy breath. Across the foreground of the design runs the Stream of Life, which widens towards the centre and forms a pool through which July wades: seasonable flowers grow upon its banks. On the extreme left is an almond-tree bursting into bloom; cedars grow in the centre, while on the right is a dead tree to which clings green ivy. In the background is seen the curve of the earth, and a rising and a setting sun symbolise the birth and death of the year. Miss Florence E. Chaplin is the author of this charming design, for which the prize was awarded.

"BUILDING NEWS" DESIGNING CLUB: A WAYSIDE HOTEL.

(For description and awards see page 55.)

(By a printer's error "The Tower House, Pangbourne," of which we gave an illustration last week, was described as "The Towering House," an untoward mistake which was overlooked till too late for correction, and for which we owe an apology to the architect, Mr. John Belcher, A.R.A.)

The rare Sienna marbles which are to be used in the construction of the high altar of the Church of the Sacred Heart of Montmartre, have arrived in Paris. The marbles have been specially chosen by M. Rauline, the architect of the church. The construction of the altar is expected to take five months. The money spent on the basilica up to the present time exceeds £1,400,000.

Last week a memorial-stone laying celebration took place at the Tabernacle Calvinistic Methodist Chapel, Bagillt. The chapel is now undergoing renovation, at a cost of some hundred of pounds by Messrs. Richard Jones and Sons, builders, from plans prepared by Mr. Foulkes, architect, Rhyl.

The partnership hitherto subsisting between Messrs. F. G. Hall, F. A. Hall, and G. W. Hall, builders, New Cross-road, S.E., under the style of Hall Brothers, has been dissolved so far as regards F. G. Hall.

The Louthgow Town Council have obtained a lease of a portion of land from Mr. Wallace Hamilton, of West Port, for the construction of sewage disposal works, on Cameron's septic-tank system. The ground extends to about four acres, the rental being £50 annually. The scheme, which includes the proper drainage of the burgh, is estimated to cost about £12,000.

PROFESSIONAL AND TRADE SOCIETIES.

LIVERPOOL ARCHITECTURAL SOCIETY.—A meeting of this society was held on Monday evening at the Law Library, Castle-street, Professor Simpson, of University College, presiding. The chairman said that they formed the oldest architectural society in the provinces, and claimed also to be the strongest. Their warmest congratulations were extended to Mr. Pearce Edwards upon his appointment to the position of city architect at Bradford. The work Mr. Edwards had done for the society was of the utmost value. Mr. Woolfall seconded a vote of congratulation, proposed by the chairman. A paper by Mr. M. H. Baillie Scott, of Douglas, who was not able to be present, was then read by the chairman. Its subject was "The planning of small country houses."

CHIPS.

Mr. F. Lidwell, builder and contractor, died recently in Dublin. He was also Grand Master of the City of Dublin Grand Orange Lodge and Deputy Grand Master of the Orange Institution in Ireland, and a prominent member of the Masonic Order; he was a Unionist in politics.

The new Congregational church in the Kineton-road, Olton, was opened on the 1st inst. The architect is Mr. J. P. Osborne. The structure, which is of red brick with white stone facings, has a tower on the left-hand side of the entrance. The church will accommodate 350 people. The seats are constructed of Oram wood. A covered way leads to the schoolroom at the back of the church, and here provision is made for 300 scholars. At one end of the room is fixed a Parian cement panel for use at entertainments or lectures when lime-light views are required. Mr. Torton, of Wheeley's-road, is the builder. The church has cost £3,500.

The new technical institute and public free library in Stretford-road, Old Trafford, were formally opened on Friday, under the auspices of the Stretford Urban District Council. The group of buildings cost over £9,000.

The Mayor of Hull has opened the new crematorium which has been erected, at a cost of £2,500, by the corporation, on the Hedon-road. The building, which has been designed by the city engineer, Mr. A. E. White, is of red brick externally, with artificial stone dressings, and is in the Early Perpendicular style, freely treated. It comprises a hall or chapel 24ft. square, a second room containing the incinerating chamber, and a tower 70ft. high. The cremating apparatus is a furnace of the regenerative type, designed by the late Mr. Henry Simon, president of the Manchester Cremation Society. It consists of three interior chambers, the two lower of which are surrounded by air-passages. The lower chamber contains a coke fire, and the upper one is that in which cremation takes place.

A new school was opened at Lynton on the 3rd inst. The building is 61ft. 6in. by 21ft. 6in., and has cost £1,400. Mr. A. Thorne, of Barnstaple, is the architect, and Messrs. James Brothers were the builders.

At Leyburn, on Friday, Mr. R. H. Bicknell, M.I.C.E., held an inquiry into an application made by the Leyburn Rural District Council to borrow £5,200 for purposes of sewerage and sewage disposal for the township of Leyburn. After Mr. Spinks had explained the scheme, the inspector said that it seemed to him that £5,200 for a scheme of disposal of 24,000 gallons of sewage a day was a very large sum.

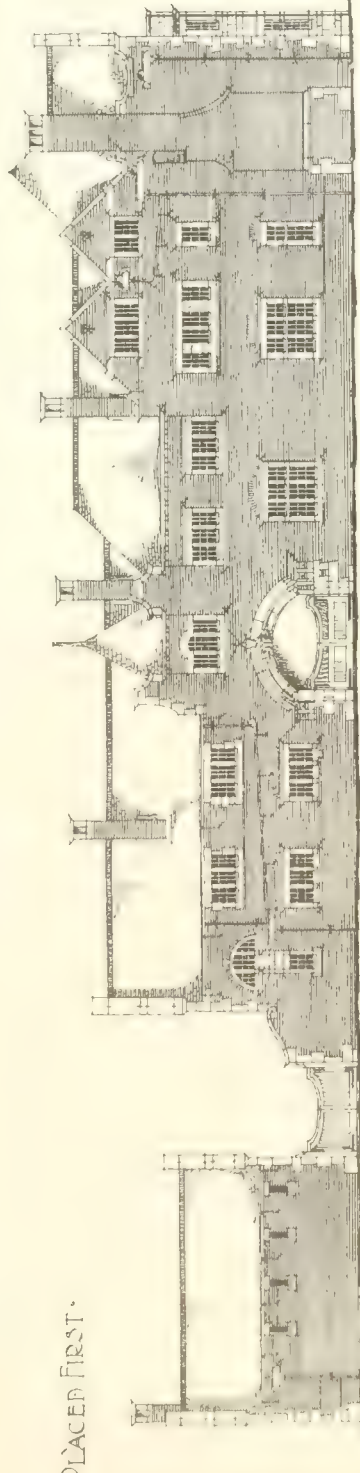
A further step towards the completion of the Holborn to Strand improvement was commenced on Saturday, when the London County Council workmen fixed the hoardings around that portion of the churchyard of St. Clement Danes recently acquired by a faculty from Dr. T. H. Tristram, Q.C., Chancellor of the Diocese of London. The work will occupy some considerable time, as about 1,000 bodies will have to be removed from the graves beneath the flagstones. The bodies when taken up will be conveyed to the London Necropolis Company's Cemetery at Woking for reinterment.

In our description last week of the new station at San Paulo, for the San Paulo Brazilian Railway, it should have been stated that Messrs. W. E. Randle and Co. glazed the roof and the sereens of this building, and also the skylights over the large workshops.

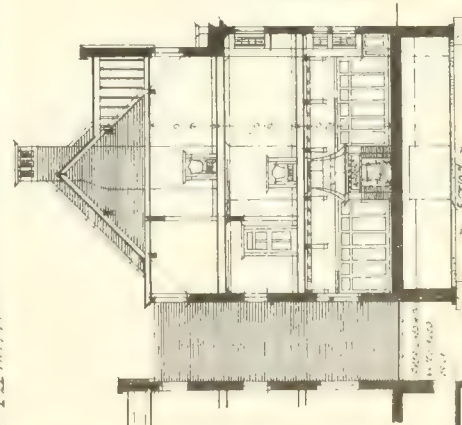
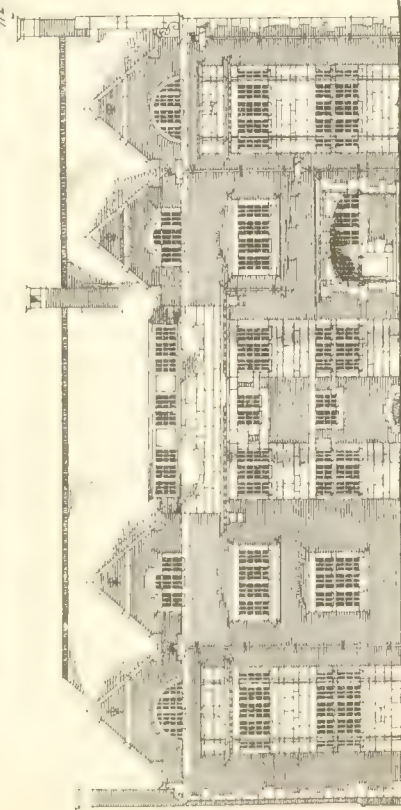
Hayward Brothers and Eckstein, Limited, Union Iron Works, Union-street, Borough, London, S.E., have just purchased the goodwill, patterns, plant, &c., of the "Alliance" Ventilating Company, late of 17, Bathnal Green-road, London, E., and have removed same to their address in Union-street, Borough, where all communications are to be addressed in future.

THE BUILDING DEPT., JAN. 11, 1901.

PLACED FIRST.



WEST ELEVATION

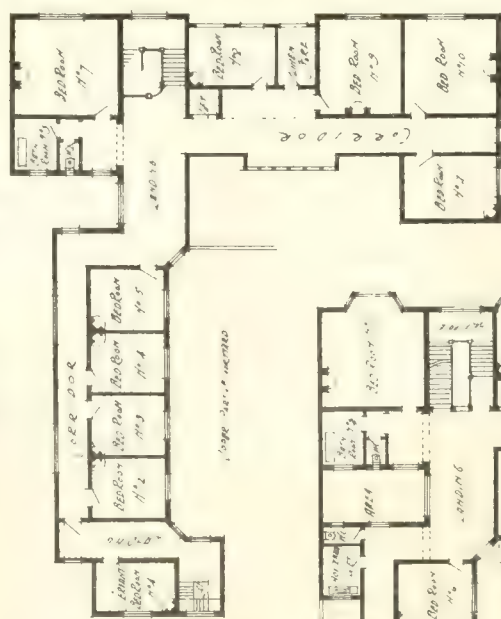


EAST ELEVATION

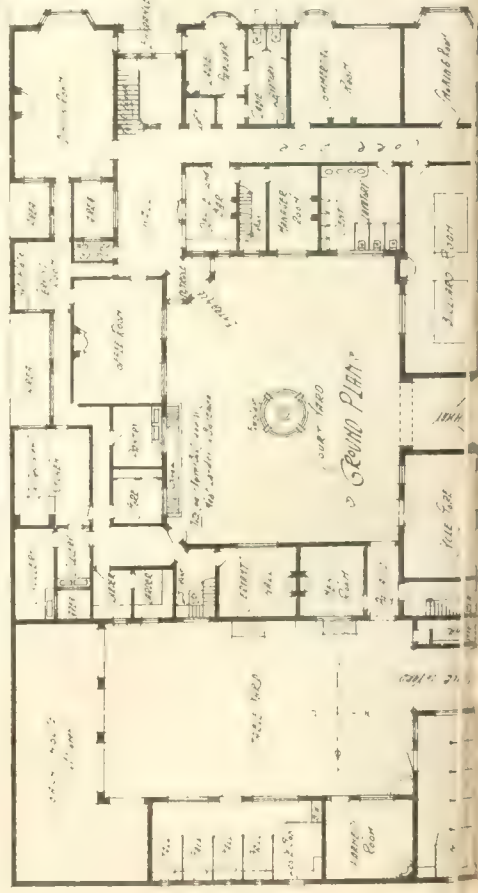
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A WAYNE HOTEL

W. H. HARTMAN & CO.



SECOND FLOOR PLAN



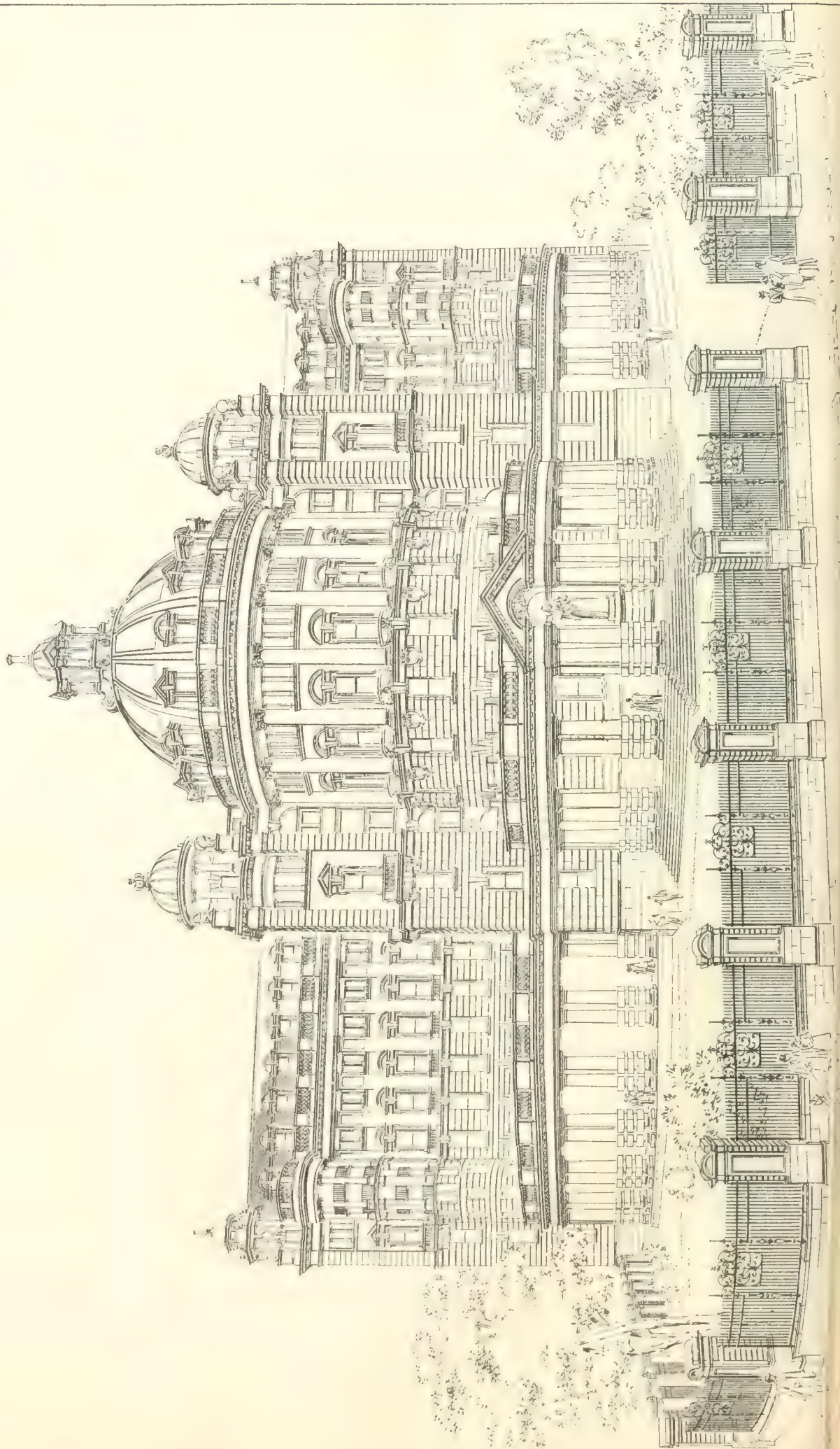
FIRST FLOOR PLAN

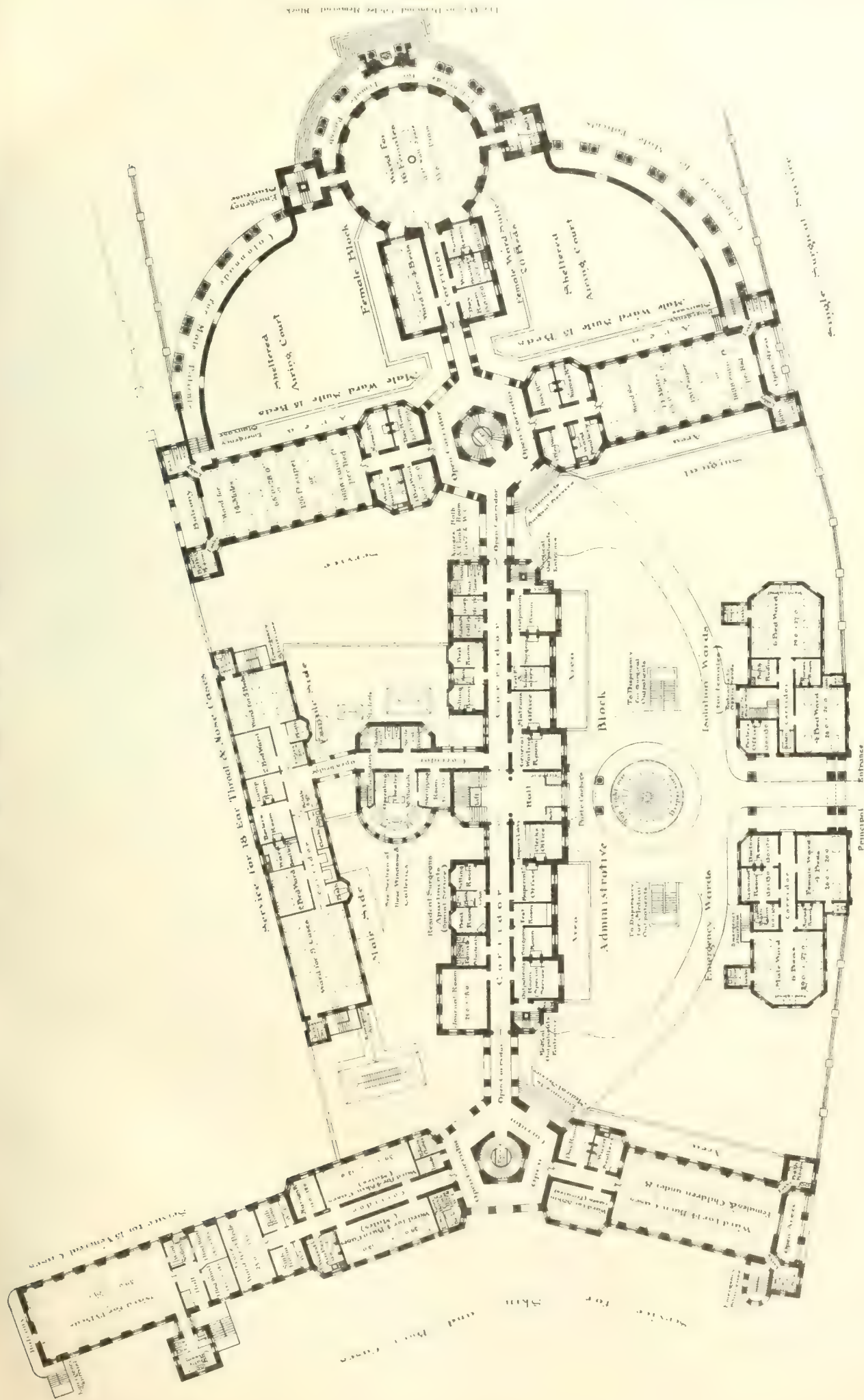
W. H. HARTMAN & CO.

NOVEMBER 1900

Building Dept. of Dist. Columbia

THE BUILDING DEWS, JAN. 11, 1901.



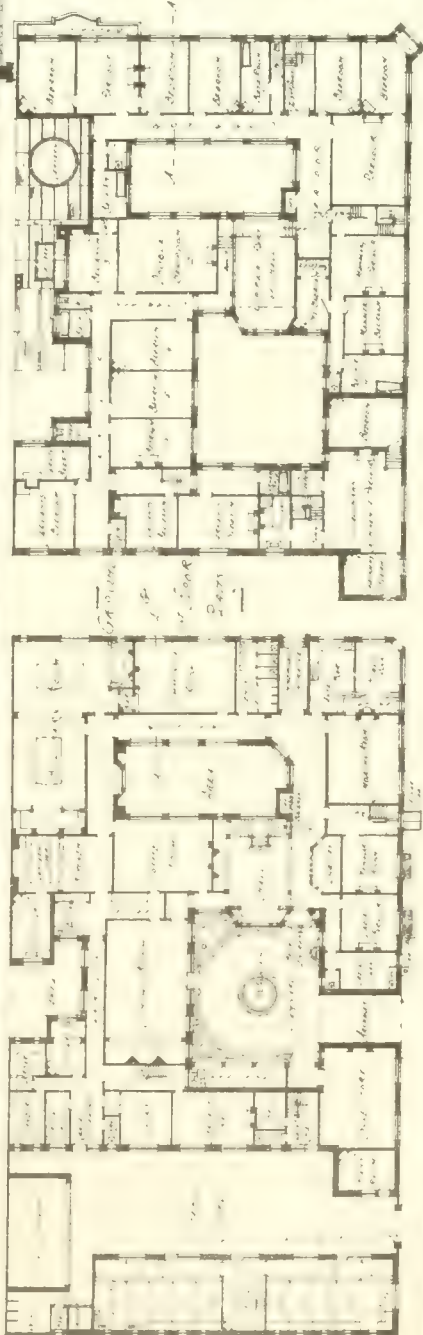
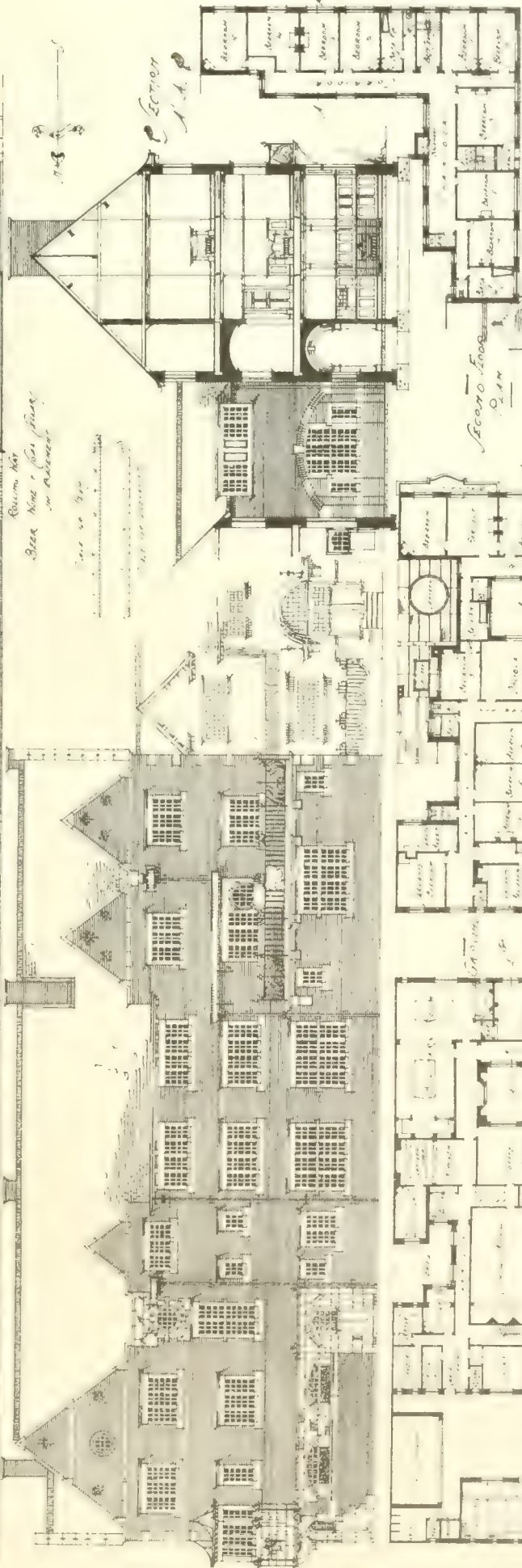
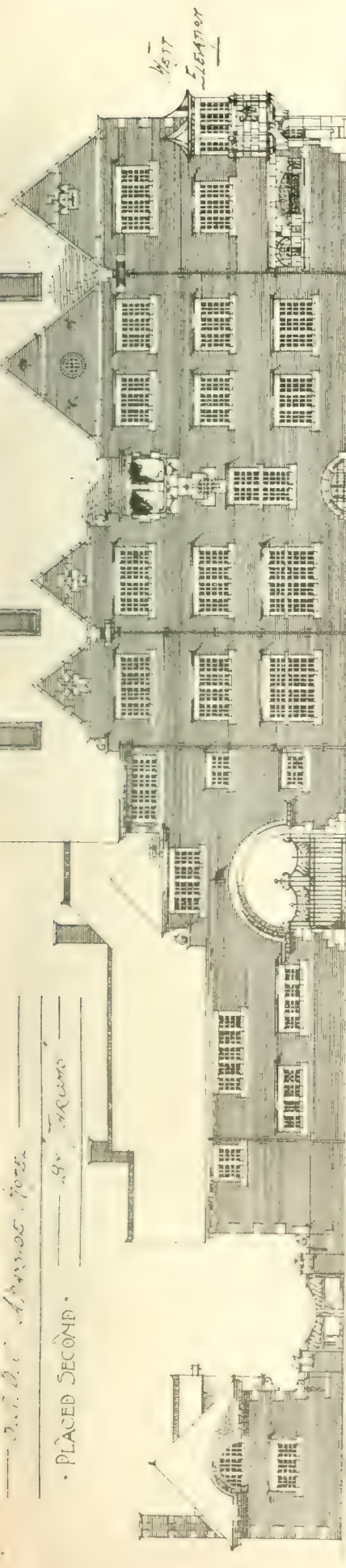


Ground Floor Plan

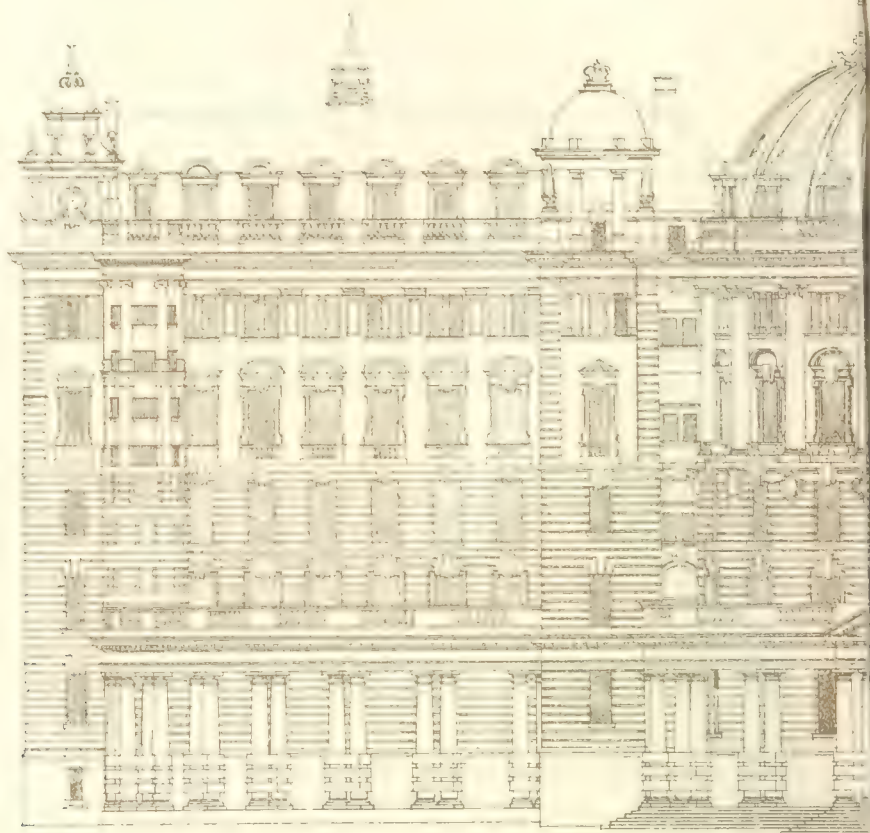
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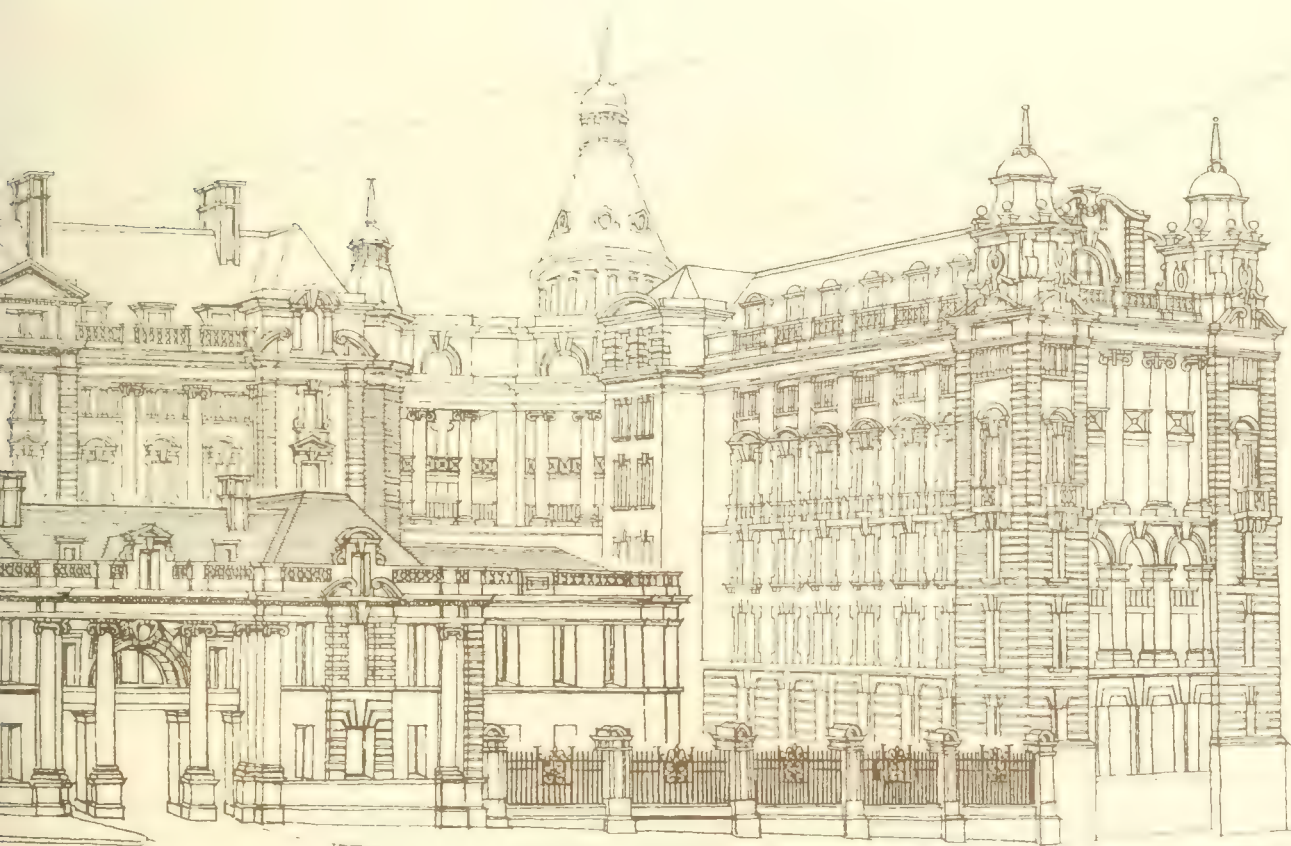
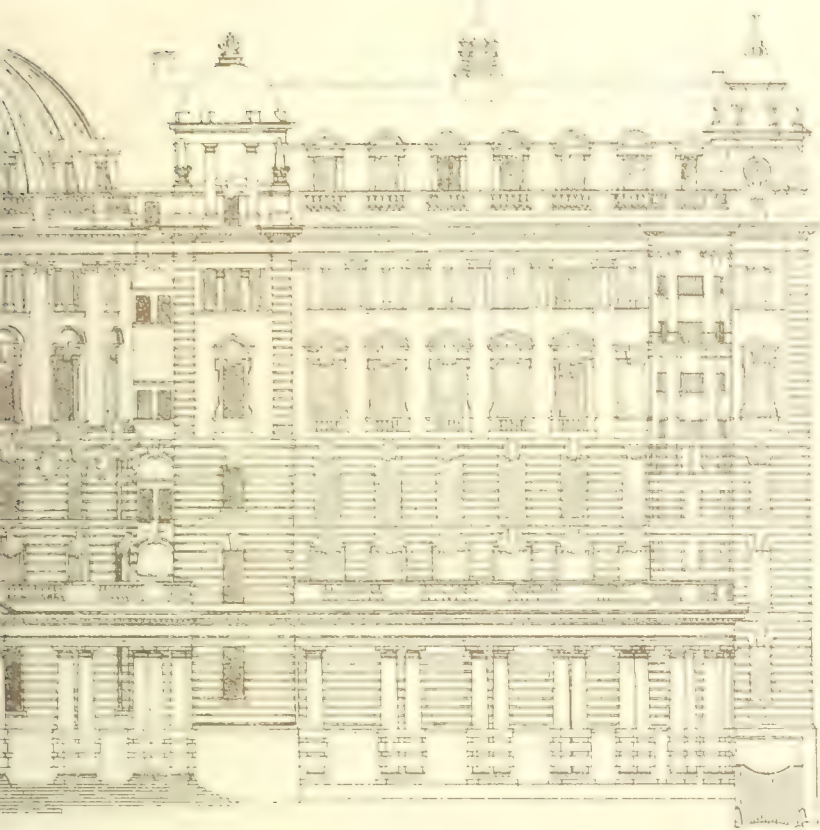
40 YEARS

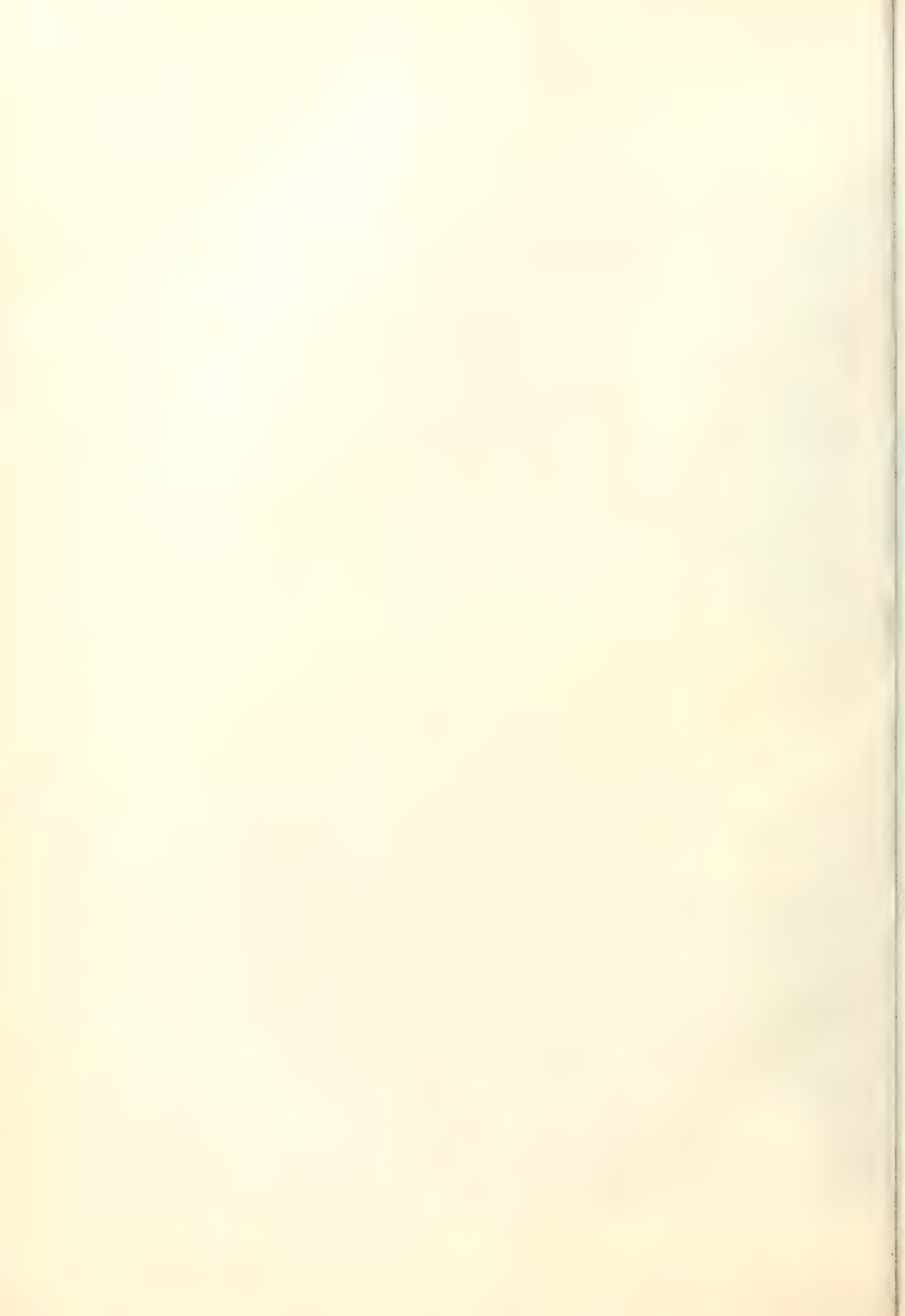






PLACED SECOND.





THE BUILDING OF



• A PROCESSION OF THE HOURS •
• ROYAL ACADEMY PRIZE DESIGN •

JAN. 11, 1907



Photo. E. H. T.

THE DEGRADATION OF A PUBLIC BUILDING
BY FLORENCE CLARENCE FRANKLIN

NOTICE.

The Editorial, Advertisement, and Publishing Offices of the BUILDING NEWS and ENGINEERING JOURNAL, are at—

**CLEMENT'S HOUSE,
CLEMENT'S INN PASSAGE, STRAND,
LONDON, W.C.,**

where all communications should be addressed.

Telegraphic Address: "Timeserver," London.
Telephone No. 1633 Holborn.

Clement's Inn Passage is the turning west of the Law Courts, opposite St. Clement Danes Church, and our new offices can be reached in a few seconds from the Strand. They will be found on the right-hand side of the way, next door to the Vestry Hall.

TO CORRESPONDENTS.

[We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.]

It is particularly requested that all drawings and all communications respecting illustrations or literary matter should be addressed to the EDITOR of the BUILDING NEWS, Clement's House, Clement's Inn Passage, Strand, W.C., and not to members of the staff by name. Delay is not unfrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

Cheques and Post-office Orders to be made payable to THE STRAND NEWSPAPER COMPANY, LIMITED.

NOTICE.

Bound copies of Vol. LXXVIII. are now ready, and should be ordered early (price 12s. each, by post 12s. 6d.), as only a limited number are done up. A few bound volumes of Vols. XXXIX., XL., XLVI., XLIX., LI., LII., LXI., LXII., LXV., LXVI., LXVII., LXVIII., LXIX., LXXI., LXXII., LXXIII., LXXIV., LXXV., LXXVI., and LXXVII. may still be obtained at the same price; all the other bound volumes are out of print. Most of the back numbers of former volumes are, however, to be had singly. Subscribers requiring any back numbers to complete volume just ended should order at once, as many of them soon run out of print.

Handsome Cloth Cases for Binding the BUILDING NEWS, price 2s., post free 2s. 4d., can be obtained from any Newsagent, or from the Publisher, Clement's House, Clement's Inn-passage, Strand, London, W.C.

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Front-page Advertisements 2s. per line, and Paragraph Advertisements 1s. per line. No Front-page or Paragraph Advertisement inserted for less than 6s.

Advertisements for the current week must reach the office not later than 3 p.m. on Thursday. Front-page Advertisements and alterations in serial advertisements must reach the office by Tuesday morning to secure insertion.

SITUATIONS.

The charge for advertisements for "Situations Vacant" or "Situations Wanted" is ONE SHILLING FOR TWENTY-FOUR WORDS, and Sixpence for every eight words after. All Situation Advertisements must be prepaid.

ENGINEER.—We do not remember giving illustrations of such.

"NEW DOMINION PRESS."—The address of the makers is Dominion House, 110, Fenchurch-street, London, E.C. We have handed your inquiry to them.

"BUILDING NEWS" DESIGNING CLUB.

DRAWINGS REFERRED TO.—"QUESTUS," "Pierrot," "Quadrant," "Smugmug," "Robin Hood," "Le Comte," "1901," "Number 15," "Alpha," "Auty Macasser," "St. Giles," "Fr. Raphaelite," "Caley," "Alphonse," "Theresa," "Air," "Embryo," "Chron," "Maori," "Pensverando," "Rutha," "Harland," "Gargyle," "Rush," "Dan," "Blow," "Rush," "Bumpkin," "Virginia," "Mate," "Scottie," "Pencil Point," "Capital de Buch," and "Limestone" very late.

A. REG. COATES. (Light can be had on all four sides of the site, except where party-wall of adjacent street frontages come right and left of the site. These may be reckoned 25ft. deep in each case.)—B. P. G. (The rules were published in the BUILDING NEWS for Sept. 28, 1900.)

Mr. Silvester Charles Capes, the author of several works on church architecture, died at Turquay on Saturday last, aged 75 years.

Correspondence.

NEW R.I.B.A. COMPETITION RULES.

To the Editor of the BUILDING NEWS.

SIR,—I hear that nothing was done on Monday evening last at the Institute in recasting the official recommendations for the conduct of architectural competitions in respect to the more than often conflicting stipulations as to the amount of accommodation required by the promoters and the limit set by them upon the intended outlay. This question is of fundamental importance, and more than any other frequently wrecks all chance of a satisfactory conclusion in contests of this sort. No assessor should lend his name to a competition unless the money available is fairly equal to the size of the building bargained for, and in every case the promoters should be obliged to state in plain terms which condition they consider of paramount importance—the cost or the accommodation. Whenever I have asked the question I have always received an evasive reply. This is extremely unsatisfactory, and the evident reason is that the promoters hope to obtain more than they are really entitled to for their money. You need not be told what the result is in nine cases out of ten. The competitors skin the construction adroitly down to the utmost limit; not infrequently the building drawn could not really be built at all; figured dimensions on the drawings do not scale with what is shown; all kinds of nefarious expedients are adopted to win the job; walls do not carry on over walls below, and when the contract plans are made, wholesale modifications have to be made, or the original money restriction has to be removed. I have chapter and verse for every one of these statements, even in competitions where assessors appointed by the Institute have made the award, and that in cases where I was a disinterested observer, and so can speak impartially. No one can have taken part in competitions without realising how important it is that the money to be spent shall be reasonably adequate for the intended building. It is no use saying that in the majority of cases the promoters take care this shall be the case. Experience proves the contrary, and the consequences are chaotic.—I am, SIR, Yours Achingly,

CHIPS.

In connection with the large number of houses which Messrs. Vickers, Sons, and Maxin are erecting at Vickers-town, Walney Island, Barrow, the slates for many of them are being brought from America. Three hundred tons have just landed, and it is stated that these can be brought over cheaper than the slate from the big quarries at Kirkby, only seven miles away, owned by Mr. Victor Cavendish, M.P., or those in the higher parts of Furness.

The Light Railway Commissioners have submitted to the Board of Trade for confirmation, under the Act of 1896, an order made by them for the construction of a light railway in the county of Salop from Cleobury Mortimer to Ditton Priors.

The town council of Stockport has approved the acceptance of tenders to the amount of £32,085 in respect of rails and equipment for electric tramways over two miles of double line and over two miles of single line.

The statue of the Queen which has been erected in front of the Council House, Birmingham, was unveiled on Friday. It is the gift to the city of Mr. W. H. Barber, who for some years practised as a solicitor in Birmingham, and now resides at Kingston-on-Thames. The figure is of heroic size, and represents the Queen in her robes of State, crowned, and carrying the orb and sceptre. Birmingham already possesses one statue of the Queen, by Thomas Woolner, R.A., and that occupies a prominent position in the upper corridor of the Council House. The one just completed is by Mr. Thomas Brock, R.A., and is similar in every particular to the one erected in front of the Shire Hall at Worcester as a memorial of her Majesty's Jubilee of 1887.

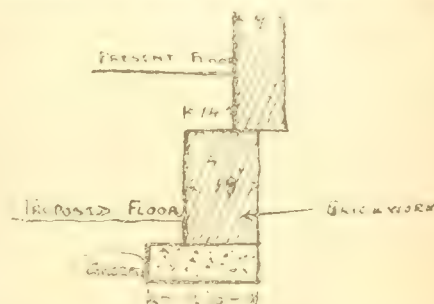
The housing committee of the Liverpool Corporation have approved of plans prepared by the city surveyor, Mr. Thomas Sheldermire, for 243 new tenements that are intended for erection in the districts of Adlington-street and Bispham-street.

The Oldham Town Council at its last meeting refused to sanction certain contracts in connection with the electric tramway scheme. It was declared that the scheme was being "rushed," and that lines were being laid long before they were needed—which, in fact, never would be needed.

Intercommunication.

QUESTIONS.

[11667].—Party-wall.—Will some experienced professional brother, kindly advise me what step to take next under the following circumstances? My client is anxious to lower his basement floor about 1 ft. but the adjoining owner objects to the party-wall being



undercut its full thickness, and has threatened us with an injunction if we do so. The local authorities, on the other hand, will not allow the work to be proceeded with, as per sketch below, although I have explained the position of affairs to them.—PERPLEXED.

[11668].—Clearing Chimney Flues.—At a large country mansion the principal fuel used is wood, with the result that in a short time the sides of the flues become covered with an incrustation, evidently the product of combustion. This cannot be removed with a brush, and the only way seems to be to scrape the flues with a scraper; but high up, where the scraper cannot reach, the flues catch fire, and the brickwork cracks with the intense heat. Can any reader suggest a satisfactory means of clearing out the flues to obviate this difficulty?—W. J. J.

[11669].—Details of Mullions.—I should be glad to know of a good useful reference book, showing illustrations and details of mullions, &c., in stone and brick, in the construction of large windows.—W. P. H.

REPLIES.

[11641].—Flooding of Heating Chamber.—If the same is caused through the tidal back-flow through a pipe, this can be remedied by using a "patent ball trap intercepter." It can be obtained in either iron or earthenware in various sizes.—H. W. HYDE.

[11655].—Right to Build.—It seems to me that the local authority has made a great muddle, and cannot justly make "Check-mate" the victim. Surely permission must have been given by the local authority to form a road; if not, did the borough surveyor actually put a public sewer on private grounds? If I were "Check-mate" I should proceed with my house and defend any proceedings which may be taken.—H. LOVEGROVE.

[11657].—Right of Light.—"Crusty Owner" must put up a hoarding or a wall if he wishes to preserve his right to build, unless he can make an agreement with the adjoining owner, providing that the proposed buildings may be erected at any time. A reasonable man would be pleased to join in such an agreement, rather than have an unsightly wall.—H. LOVEGROVE.

[11658].—Book-Keeping.—If "J. A.," or any other reader, will write, I shall be pleased to give particulars, &c., of a good system.—F. J. WEBBER, 34, London-road, Portsmouth.

[11666].—Sines, &c. The main difficulty under which "Verdant Green" is labouring is that he does not realise that the line O B, bisecting the quadrant C A O, has the same ratios to the other lines B E, &c., no matter what the radius of the circle is. (a) The sine of the arc A B is the sine of the angle B O A, subtended by that arc at the centre O, and so on for the other ratios. (b) Books on trigonometry published in 1842 are out of date. Try Locke's "Elementary Trigonometry." (c) Logarithmic sines are quite different things from trigonometric sines.

The line B E is an out-of-date way of writing B E. O B being a constant for all the ratios. If B E being parallel to A F, the base of the triangle A O F, by Euclid VI. 2. The ratio $\frac{B E}{O B} = \frac{A F}{O F}$ —J. H. L.

Mr. E. Roscoe Mullins is executing an equestrian statue of his Highness the Thakore Sahib of Morvi, who is now in London, and giving the sculptor sittings for the work.

This year the eighth exhibition of the Fine Arts will take place in the Royal Glass Palace at Munich under the patronage of the Prince Regent of Bavaria, and with Prince Ludwig as hon. president. This will be the second exhibition organised by the combined forces of the Munich Artists' Association and the Secession Society.

At the last meeting of the Sunderland Corporation Tramways Committee a statement was submitted, showing that although there had been a heavy loss on the horse traction, the gain on the electric was so great that there had been a profit of £3,827. It was estimated that when the whole of the new system was completed there would be a profit, after allowing for every expense, of some £10,000.

Our Office Table.

The Anglo-Carrara Marble Company, hatched nearly two years ago, did not go to allotment. A good deal of nonsense is being talked again about a "corner in marble," not only in English but in New York papers. There is, we believe, no truth in the report. No one seems to know anything about the matter in Carrara, and a telegram has been received from that place, in which it is stated on the authority of some of the most prominent firms in the well-known Italian marble centre that the report is laughed at. We are not surprised.

DETERMINED and organised opposition is to be revived in Parliament to the extension of tube railways in London, on behalf of house owners whose property is threatened by damage from vibration. At a meeting of residents of Paddington, held on Tuesday at 48, Gloucester-square, Hyde-park, it was resolved that, considering the danger and annoyance caused by the Central London Railway, no Bill affecting the Paddington district should be allowed to pass for the construction of a similar railway until further experience has been obtained as to the effect of underground electric railways on surface property, and that in any case a proper clause should be inserted providing for compensation for damage.

THE fall last week of one of the trilithons of Stonehenge, has given rise, as might be expected, to a vast amount of correspondence in the daily journals. One writer positively asserts that the mystic circle is not composed of "stones" at all, but of slabs of artificial concrete, and asks that a fragment of the block fractured by the recent accident may be analysed—an operation that would, of course, set the matter at rest at once, although this is really unnecessary. "An Engineer" writes that the stones are only "embedded to the depth of a very few feet in the soil and underlying chalk." This is an insecure foundation. It is always liable to erosion, and the grip must inevitably be somewhat uncertain when the exposed surface is about six times the area of that which is buried. His proposal is to dig a trench on one side of each stone, down to the base, and fill it with concrete or cement. When this material hardened all the other sides could be dealt with similarly, the turf being, replaced on the new bed. The plan is not new, having been suggested more than twenty years ago by Dr. Flinders Petrie; but it is practical, and might be carried out at comparatively little cost.

At a meeting of the Norfolk County Council at Norwich, held on Saturday, the Committee of Visitors of the County Lunatic Asylum reported that it had decided to expend £48,000 in extending the asylum, introducing the electric light, and various engineering works. It was also stated, on the advice of the architect, that the committee would not ask for open tenders. In supporting the adoption of the report, the Earl of Kimberley said he agreed with the recommendation of the committee not to ask for open tendering; but they also ought not to be led away by all that architects said. He had no reason to suspect architects more than any other men; but there was nothing more disastrous than to allow professional men to dictate to the council in the matter of building. The report was adopted.

At a joint conference held at the Club Union Buildings, London, between the Technical Education Committee and the instructors of the plasterers' classes at the various polytechnics throughout the London district the following resolution was adopted:—"That all minor members of the union up to the age of nineteen years shall attend the nearest class to his residence at least six times in one month during the session, and failing this he will be summoned before the Technical Education Committee for an explanation." The committee will exercise their discretion where students are not in a position to pay their fees. The union are determined to make their apprentices competent workmen, so that they may command full wages at the age of 21.

AFTER communication with, and on the invitation of, the Central London Railway Company and a committee representing the owners of houses in the vicinity thereof, the Board of Trade have appointed a committee, consisting of Lord

Rayleigh, F.R.S. (chairman), Sir John Wolfe-Barry, K.C.B., F.R.S., and Professor Ewing, F.R.S., to consider to what extent the working of the traffic on the Central London Railway produces vibration in the adjacent buildings, and what alterations in the conditions of such working or in structure can be devised to remedy the same, and to report to the Board of Trade. The committee will meet for the transaction of business on the 11th inst. Voluminous evidence has been prepared on behalf of residents on the route, for submission to the committee.

MEETINGS FOR THE ENSUING WEEK.

MONDAY.—Society of Arts. "Elementary Art Education," Cantor Lecture No. 1, by J. Liberty Tadd. 8 p.m.
Surveyors' Institution. Discussion on "The Future of the London Water Supply." 8 p.m.

Bristol Society of Architects. "Building Contracts from Contractor's Standpoint," by Frank Cowlin. 8 p.m.

TUESDAY.—Society of Arts. "Cameos," by Cyril Davenport, F.S.A. 8 p.m.

Institution of Civil Engineers. Discussion on papers (already read) on "Glasgow Bridge," by Benjamin Hall Blyth; "Railway Bridge over the Fitzroy River, at Rockhampton, Queensland," by Walter James Doak; and "The Niagara Falls and Clifton Steel Arch Bridge," by Leffert Lefferts Buck. 6 p.m.

WEDNESDAY.—Society of Arts. "Photography of Natural Colour by the McDonough-Joly Process," by H. Snowden Ward. 8 p.m.

St. Paul's Ecclesiastical Society. "Notes on City Churches," by F. Herbert Manford. Chapter House, St. Paul's, E.C. 7.30 p.m.
Edinburgh Architectural Association. "Colour in Architecture," by Professor G. Baldwin Brown. 8 p.m.

THURSDAY.—Society of Arts. "Metalliferous Mining in India," by John W. Evans, D.S. 4.30 p.m.

FRIDAY.—Architectural Association. "Flats," by Edwin T. Hall, F.R.I.B.A. 8 p.m.

THE ARCHITECTURAL ASSOCIATION.—JANUARY 18th.—ORDINARY GENERAL MEETING at No. 9, Conduit street, W. at 7.30 p.m. Papers by Mr. EDWIN T. HALL, on "Flats," illustrated by Drawings of Flats in London, Paris, and Vienna.

G. B. CARVILLE, Hon. Sec.
R. S. BALFOUR.

It was reported to the Halifax Town Council on Friday that the total cost of the new court-house and police-station has been £27,764, including £1,070 for the site, whereas the architect's estimate, exclusive of site, was £11,500.

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Quebec Pine, yellow..... " 4 7 6 to 5 5 0

" Oak..... " 3 15 0 to 5 10 0

" Birch..... " 3 0 0 to 6 0 0

" Elm..... " 5 0 0 to 6 0 0

" Ash..... " 3 7 6 to 3 15 0

Dantisc and Memel Oak..... " 3 5 0 to 4 15 0

Fir..... " 3 0 0 to 4 0 0

Wainscot, Riga p. log..... " 1 17 6 to 3 5 0

Lath, Dantisc, p.f..... " 4 0 0 to 5 15 0

St. Petersburg..... " 4 0 0 to 6 10 0

Greenheart..... " 7 15 0 to 8 0 0

Box..... " 7 0 0 to 15 0 0

Sesquial, U.S.A., per cube foot..... 0 1 9 to 0 2 0

Mahogany, Cuba, per super foot..... 0 0 6 to 0 0 8

lin. thick Honduras..... " 0 0 6 to 0 0 7 1/2

" Mexican..... " 0 0 4 to 0 0 4 1/2

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" Honduras..... " 0 0 3 1/2 to 0 0 3 1/2

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Memel, cr. pipe..... 220 0 0 to 230 0 0

Memel, brack..... 190 0 0 to 200 0 0

OILS.

Linseed..... per tun £31 2 6 to £31 12 6

Rapeseed, English pale..... " 31 5 0 to 31 11 1/2

Do., brown..... " 29 10 0 to 29 15 0

Cottonseed, refined..... " 21 0 0 to 22 0 0

Olive, Spanish..... " 35 0 0 to 39 0 0

Seal, pale..... " 26 0 0 to 26 13 0

Cocunut, Ceylon..... " 27 5 0 to 27 10 0

Do., Ceylon..... " 25 15 0 to 26 0 0

Palm, Lagos..... " 28 0 0 to 28 5 0

Olive..... " 17 5 0 to 19 5 0

Lubricating U.S..... per gal. 0 7 0 to 0 8 0

Petroleum, refined..... " 0 0 6 3/4 to 0 0 6 3/4

Tar, Stockholm..... per barrel 1 6 0 to 1 6 0

Do., Archangel..... " 0 19 6 to 1 0 0

Turpentine, American..... per tun 37 0 0 to 37 5 0

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

VOL. LXXX.—No. 2402.

FRIDAY, JANUARY 18, 1901.

DIFFICULTIES OF PRACTICE.

SEVERAL difficulties confront the younger men that enter the profession, and these increase rather than diminish year after year. We propose to take a few of them. Those who have emerged from their office pupilage, or have successfully passed the examinations provided for them, will find it hard sometimes to reconcile what they have learned with practical building experience. They see, to their chagrin and dismay, men of no education, untaught in the mysteries of the architectural craft, ignorant of art and the principles of science, engaged in building, superintending buildings, acting as clerks of works, and even practising as architects. Such experience comes as a surprise and a shock to the young architect who has honourably acquitted himself before his examiners, or as a winner of prizes at the Institute or the Academy. That a builder's clerk, or one who has worked at the bench, should be able to undertake any building, even to prepare plans and elevations of houses and shops and factories, sends a pang of disappointment through many a young architect who has up till then dreamed that only special training could alone prepare one for the task. And what is quite as hard to bear is that the young craftsman or builder's clerk comes equipped with a kind of rough-and-ready knowledge, with physical strength and endurance, agility in climbing scaffolding, that the young inexperienced architect does not possess. It is this special equipment in building operations that presents so great a difficulty at the very beginning: it can only be learned on the building and in the workshops, in contact with the workmen themselves. The inexperienced architect finds it impossible to bounce his way upon the building: he tries his best to intimidate or cajole the contractor by declaring his authority, or referring to the specification and contract, as credentials of his position; but this plan he soon finds impracticable when he discovers that the builder's foreman knows just a little something that has not occurred to him—some other way of doing the work that practical conditions have rendered necessary. It is a little mortifying to be told that the depths of footings specified cannot be adhered to; that lime concrete is just as good as Portland cement concrete in certain positions; that the bricks specified to be used are not the best for internal plastered surfaces. In all trades there are certain "wrinkles" that can only be learned from experience.

One difficulty is met in not realising the practical conditions of building materials, and this is where the rough-and-ready knowledge of the practical builder or foreman comes into conflict with the architect's theoretical knowledge. Few have to suffer more from disillusionment than the architect when brought into practical contact with building materials. His knowledge of the properties of clays, the proportions required in a good brick earth of silica and alumina, and the percentage of lime or other flux to fuse these ingredients, or how much oxide of iron or magnesia is necessary to give it colour may be sound, but it does not stand him in good stead when confronted with a load of bricks delivered for use. His textbook knowledge of brick earths, distinguishing between pure or strong clay, sandy or loamy clay, marls and limy clays, avails him little when he comes to examine a quantity of bricks, and his only

guarantee is to apply those simple physical tests which the practical architect adopts, such as striking the brick with a mallet, trying its absorbent properties, and seeing that it is true in shape, is well burnt, and free from lumps of lime. The formula that the bricks should be "hard, well burnt, square, and regular in shape," comprises all that the practical man troubles himself to know. So with the many varieties in the market. The textbook will hardly inform the young architect of the differences between machine-made and hand-made bricks, or between the qualities known as "slop" or "sand-moulded." We do not undervalue the instruction given in our building science classes, if we inquire how many of those who pass know the difference between "clamp" and "kiln"-burnt bricks when they see them. Again, there are parts in walls and foundations where even "burrs" and "chuffs" can be used. In the composition of mortar, how few architects are able to test such matters as the freshness of the lime or its slaking, or the prescribed proportions, or whether the sand is of the right sort, clean and free from salt, or that the specified cement tests are carried out. All these matters, of practical importance, are troublesome to the architect, and he is content to leave them to the clerk of works. Then the younger men in the profession experience a difficulty in comparing their textbook descriptions of building stones with the actual material. The rough-hewn blocks of stone as they are delivered in the mason's yard defy the critical capacity of the theorist; only the builder or clerk of works can determine the nature and quality of the stone and its quarry bed. Timber presents the same difficulty of detection, and only those who know the secrets of the trade, the marks or brands of shippers, have any guarantee of the qualities. Books on timber, which describe the timber imported from Russia, Sweden, Prussia, or other country, do not help the young architect in discovering the several qualities, such as "Crown," "Best Middling," "Second Middling," and leave him pretty much in the dark, except that he is safe in rejecting the sapwood, large, loose, or dead knots, and unseasoned timber. And so it is with all other materials; the chief obstacles to encounter are the conventions of the market and the manufacturer, which make the application of principle and knowledge so hard to learn outside the yard or the factory. The forms or shapes which timber, stone, slate, iron, and other materials assume in the market, offer a special difficulty to the office- or class-trained architect. What he has been taught by books or from specimens in classrooms mislead him as to the size, weight, form, and appearance of materials. The builder's clerk or the youth that has been trained among workmen in the various shops or on the building in progress quickly obtains all this extraneous and practical information, and he therefore can apply his knowledge with less trouble. The architect's pupil, on the other hand, has to convert his knowledge into actual facts, and this translation of class-teaching and textbook into the actual building is troublesome. We have dealt at some length with this difficulty of converting acquired theoretical knowledge about materials into concrete facts, because it lies at the root of the separation of our art from building. Architecture or building as an art has to be translated into building as a trade. Some years are required of the young architect's life to enable him to apply effectively what he has learned; that will enable him to dispense with much of the *ipse dixit* of mere theory, to translate his theory into facts. When he can fall back on theory to justify his practice, or *vice-versa*, and can call to his assistance both his scientific knowledge and his experience, he is in a happy condition; till then he

has to pick up his practical knowledge slowly, but surely.

The discrepancies that often occur between the drawings of the architect and the actual execution display another phase of the question we are considering. In these discrepancies the young practitioner finds much to make him anxious and impatient at times. His very complete and perfect set of drawings for contract work, which have taken him weeks to prepare, and cost much thought, are here and there found wanting. At the very beginning of the building the foundations obviously require to go deeper and to be spread more—matters that were unsuspected till the trenches were dug: the quantities provide considerably less brickwork than is shown in the plans; additional piers in cement have to be built to carry girders; or some of the masonry cannot be worked as shown. In the carpenter and joiner's work many of the details are discovered imperfect: the dimensions do not agree with those of the actual building, and many changes have to be made. Or the carpenter or joiner cannot work to them as shown, owing to some technical error in design. These are things that occur every day to the younger men in the profession, and they indicate the wide gulf that separates the drawing-office from the workshop. Their most elaborate drawing of details, on which much time and thought has been expended, turns out to be worthless, owing to some error of judgment—a useless waste of material in not consulting the building. Detail drawings are made from imperfect data, or hurriedly from the general drawings, instead of being devised from consultation with the real building or workmen. It is a desirable plan in contract work to have all the principal details out before the contract is signed; but the plan is not the best or most fortunate for the inexperienced architect, who cannot be expected to know the workman's way of looking at things. Therefore, it is a safer course to prepare some details—such as those of stonework, of wood, or ironwork—when their connection with the building or other materials can be realised or more clearly seen by reference to dimensions or ascertained facts. The details prepared are not always to the builder's liking. We know that the builder or the foreman of carpenters objects to execute any piece of timber-framing according to detail where the scantlings would necessitate cutting from the balk instead of using the stock sizes of timber: they prefer wood cornices for joinery that are made up of moulded thicknesses to solid-run pieces, "planted" to "stuck" mouldings. In stone cornices, the same objection to solid-worked stones is often made on the score of waste. These technical objections are troublesome to the designer who has tried to give a solid and substantial effect to his detail. The experienced architect knows how hard it is to induce the contractor to look at the work from an artist's point of view, and he will discover the hopelessness of the task when any detail of unusual design or shape is presented to him to carry out. Repeated evasions of the architect's intention are made when it is too late to alter. The builder's excuse is that he could not work the material as shown; that the mode of construction would be impracticable, and so on. Perhaps there is sometimes a little to blame on the architect's part—the love of affectation to do something original; or, as Professor Pite said the other day, to "sacrifice everything to a hobby or a piece of empty cleverness." But the discrepancy discovered by the builder between the drawing and specifications or quantities is a constant trouble to the inexperienced;—it means compromise—the architect must yield to the quantities, or the latter to the design.

To the artistically sensitive man the requirements of such matters as plumbing,

sanitary fittings, ventilation, heating, &c., give much trouble; but to others of the perfunctory order of mind they are matters indifferent. To the former these details of building are looked upon as points that may mar the design if left to tradesmen who are careless about the matter. Great care is necessary in drawing up separate contracts with manufacturers and engineers if the character of the building is not to be spoiled by clumsy makeshifts, unsightly cowlings, awkward arrangements for pipes or coil-cases. The points necessary to keep in the architect's hands these details are often overlooked, and the general contractor is hardly to be blamed if he goes to the cheapest market, or refuses to pay for a class of workmanship not particularly specified. When sub-contractors are employed, there will be friction unless they enter into a contract with the general contractor guaranteeing a due performance of the work, and indemnifying the latter against any damage or any claims made against him; and in this connection clause 20 of the Schedule of Conditions, sanctioned by the Institute, may be usefully adopted.

We live in an age of specialities. Year by year the inventions and applications in reference to building increase, till at the present time the number of building fittings and specialities is beyond the reasonable acquirement of the architect—that is to say, he cannot know them all sufficiently to decide on their merits. He specifies a new window fastening, a new sanitary apparatus, or a new decorative material, because it answers his purpose. Each may be good in its way, yet he is exercising a degree of responsibility that may be rash. His client is anxious to have the best. In these days the selection of a manufactured article for either use or decoration has become a professional duty of much responsibility, and one demanding a considerable acquaintance with modern invention, as well as knowledge of the crafts. In selecting an article the architect has, in justice, to consider not only what is the best, but that which fulfils the mission of art. There are a lot of good things and a lot of rubbish that can only be separated by a technical knowledge of the trades and a clear insight into what is wanted.

THE SOANE MEDALLION AND INSTITUTE PRIZE DESIGNS.

THE annual exhibition of studentship and prize designs has been on view at the Alpine Club, Savile-row; and we first remark the large number of competitors that have entered the list for the Soane Medallion, the Tite Prize, and the Grissell Gold Medal, as well as for the Pugin Studentship. But with respect to the quality or merit of the designs there may be a doubt. The Soane Medallion subject—a design for a clubhouse in a large city—has only produced one or two good designs out of the twenty-two set submitted this year. Many of these display a disregard for what may be called the proprieties of good Classic or Renaissance design. Others are simply eccentricities, though displaying talent in a few of the details. The Tite prize for an entrance gateway to a public park has been competed for by many who appear to confound elaborate or imposing architectural monuments with skilful arrangement and good Classic design. We have replicas of triumphal arches, far-spreading colonnades, monumental erections of temple-like character, piazzas, and other palatial adjuncts. For the Grissell subject, a design for a timber footbridge across a stream, there is perhaps less difficulty in making a selection, though very few have quite caught the right idea for a design for a timber bridge, many of the competitors rather disguising than accentuating the material in the construction.

No fewer than twenty-two designs have been sent in for the Soane Medallion and £100 prize. These are of varying degrees of merit, some very deserving attempts to do justice to the subject, others without any apparent effort to solve the problem, and commonplace in elevation. "Ars," No. 3, is unquestionably the most able design. Instead of a flat frontage, the author breaks it into two equal receding lines from the extremities of the front, making an obtuse internal angle, occupied by a projecting porch surmounted by a semicircle of isolated Corinthian columns on the first story, and crowned by a flat domical roof. The effect of this treatment is to give a bold centre feature, and to obtain areas in front, and also at the sides, for light to the staircase and hall and card-room. The two projecting wings thus formed are devoted on the ground floor to the strangers' dining-rooms, reception, and cloakrooms, on each side of entrance-hall, which forms a handsome feature in the centre of the block, leading at the back to the large coffee-room, 11ft. by 30ft. The staircase, in two flights, ascends at the end of hall, which is subdivided by columns. The open colonnade carrying front circular loggia and the octangular arrangement of columns in front of the stairs would make an imposing hall. The coffee-room is also broken into compartments by columns, and there is a sense of architectural planning. On the first floor the main centre staircase and gallery round leads to morning-rooms, 55ft. by 30ft. and 41ft. by 30ft., and library, these being over the coffee-room. The smoking and writing rooms and saloon are in front. The second floor is divided into billiard-rooms and members' bedroom. The usual offices are placed in the basement. The design externally partakes chiefly of the Italian Renaissance; besides the centre circular loggia and cupola, the ends of the two sides are terminated by projecting piers adorned by sculpture and of monumental character, and a deep cornice with windows crowns the façade. A French feeling is seen in these details of the design. A large detail shows the internal treatment of the domical hall.

The next best design is that with motto "Ionic," a columnar façade with a single Ionic order on a rusticated basement. The centre has coupled columns, and supports an attic with segmental-shaped cornice. The design is well proportioned, and drawn in ink. The plan shows a centre hall and side staircase. The morning and smoking rooms are on each side of entrance; the coffee and strangers' room in the rear. There are three open light-courts, two on the side forming recesses. On the first floor, the house dining-room and writing-room are in front; the strangers' dining-room is lighted from court, and the other dining and service rooms are behind. On the second floor are the committee-rooms, billiard-room, dressing, and bath-rooms in the rear. The details are well drawn. A mezzanine plan, showing decoration of ceilings, provides a library and music-room. The plan generally is compact and well arranged in its main hall and approaches to large rooms. We can only briefly notice the other designs. Amongst these is "Fording-bridge," a Classic-designed façade with wings, drawn in a bluish-grey wash. The plan is distributed round four open light-areas, the writing and smoking-room being on each side of entrance hall. A corridor leads to strangers' smoking-room on left, with cloak-rooms and lavatories on each side disposed in the areas—a satisfactory arrangement. The club and strangers' dining-rooms are in rear, service and lifts &c., are carefully arranged, and the plan is compact. "Ace of Clubs" is designed in a style more suitable for the hotel of a market town—a kind of English Renaissance, but scarcely suited for a city club-house. The plan has redeeming features. "Ace" shows

some clever drawing in the detail of one wing of front; but the design is a strange medley of features, especially the arched gables with finials at the apices, and the small gables in centre of front. The plan is confused in parts. "City" is a rusticated design well drawn and carefully considered. "Thistle" is also rusticated in the windows. There is a large area on one side of site for light, and this is inclosed in the rear by the library and waiting-room, and in front by the morning-room and billiard-room. The plan is therefore unsymmetrical; the staircase is on the right hand of centre hall, which extends into the building, and gives access to the library, &c. The details are well drawn. "Hal" has two orders in a Palladian style, with narrow gabled ends and attic, open under roof, supported by columns; a rather curious feature, though it may be made useful. The plan is cramped, and the coffee-room and library are spoiled by the re-entering angles. "Ultimus" is distinguished for a view of front showing very attenuated pilasters, and four stories in height. The entrance-hall is near one side. The ground and first-floor plans are the best. We must also briefly refer to "Melba," a design lacking civic character. The singular wings, with coupled columns, with a gable in centre, of primitive simplicity, are eccentric. "Red Seal" is conceived in a Greek Ionic spirit; the plan is full of corridors. "Rime" has also thrown away the opportunity. "Thor" is a bold, large drawing of a lofty building, accentuated by thick vertical lines or piers, clever in parts, but more suited to a factory. The plan has merit. The centre hall leads to a grand stairs at the side. "Q. E. F." has a single order Ionic on the first story, with pedimental wings; it is bold, and the plan shows study. "Ivanhoe" is rather "mixed" in style, wanting character; the plan is elaborate and symmetrical, but without simplicity. "Pan" is of florid Renaissance character, with front oriel windows corbelled out and three large gables above. The scroll dressings to window are too extravagant. "Iliawatha" has a studied plan; the elevation is a simple pilastered front of two stories and a centre.

The Tite prize for a design for an entrance gateway to a public park has been responded to by twenty-six competitors, but out of this large number we can only point to one or two that seem to adapt themselves to the purpose. Looking over the elaborate and often extravagant scheme, such as those of "Pencil," "Flori," "The Bard," "Le Nord," "Tenax Propositi," and others, many of them displaying able draughtsmanship and clever detail, we can only come to the conclusion that the instructions left the designers very free, and without any guide. One of the Classic designs, under the motto "Corona," exhibits a very correct and elegant adaptation of Classic gateway, a centre-pedimented structure inclosing the main archway with isolated columns and wings of lower height, with coupled columns connected with a quadrantal colonnade on each side; but though very well drawn and shaded, it hardly fulfils, to our mind, the requirements of an ordinary park gateway. Much simpler, and more adapted in its detail, is the design "St. George," the gate piers being connected with outer piers by quadrants of columns. The simplicity of the ironwork adds to the interest of the design, which shows much reserve. "Tenax Propositi," shown in a clever ink perspective, is an elaborate composition with angle towers of rather bold design, with open crown summits; but it lacks unity. "Tay," "Marble Arch," "Spes," "Boadicea," "Nap," are extravagant or ill-proportioned.

For the Grissell Gold Medal Designs for a Timber Footbridge, the competing authors have sent in several clever suggestions and drawings. "Koppnob" is a well-framed

truss design with laminated arched rib of six lin. boards sprung to radius and screwed together. "Forward" is a simple and effective timber-treated structure. "Utile Populo" shows an ingenious cross-braced design. "Trabs" is a sensible design; curved elliptical ribs spring from struts under the platform. "Telford II." shows a too elaborate system of braces stop-chamfered. "Ilex" is constructed on the laminated-rib principle, but the rib is above the foot-way, and the details are well worked out.

For the Pugin Studentship nine sets of drawings are exhibited. Among the contributors we note the drawings by J. C. Cook, including "Trunch Church, Norfolk," and wash and other drawings of Elgin Cathedral, Kettering Church, Octagon at Ely, Southwold Church, &c. C. B. Pearson sends some very nice pencil drawings of churches in Yorkshire, also of Westminster Abbey. The effective sketches, some tinted in brown, of St. Mary's, Oxford, and details from Rouen, by J. Forbes Smith, and the broad-pencil sketches of Shirley Harrison, especially the work from Wells and Shepton Mallet, Crosscombe Church, and other old Somersetshire examples, are very excellent. H. Comyn, H. W. Cotman, Frederick J. North, H. Phibbs, and A. J. Pitcher also send creditable work.

The Institute Silver Medal and Ten Guineas for measured drawings of ancient buildings in the United Kingdom or abroad, has been competed for by eight students. The device of a "Cannon" is the imprint on some interesting drawings of Burghley House, near Stamford, one peculiar point to notice in the elevation is the uneven string-courses which no doubt arose from structural exigencies. The drawings of St. John's, Westminster, plan, section, and details by "Archer"; those of the Guildhall, Exeter, by "Semper Fidelis"; of Holy Trinity Church, Hull, by "Petrel"; of "Roda"; Church of St. Magnus, Fish-street Hill; the fine drawings of Kirby Hall, by "Stafford Knot," and those of Walpole St. Peter's, Norfolk, by "Cross Keys," are interesting records that deserve study.

Several very interesting examples of colour decoration are contributed for the Owen Jones Studentship. The coloured drawings by E. Bennett from Fontainebleau Palace, and those of mosaic, from St. Mark's, Venice, and the study for stern of vessel in colour, are very admirable. Percy E. Nobbs sends some excellent coloured sketches from Verona, Milan, Lincoln, and the drawings of painted decoration, &c., by Ramsay Traquair, especially those from Verona, deserve notice.

EXHIBITION OF MODERN ILLUSTRATION.

THE idea of holding an exhibition of modern illustration is one that deserves commendation by all lovers of an art which has given so much pleasure and amusement to thousands of readers of narrative, fiction, and works of a descriptive kind, and we think the Society of Illustrators who initiated the proposal are to be congratulated on the result of their enterprise, which the Science and Art Department (now the Board of Education) have so well organised. The present exhibition is restricted to typographic illustration adapted to books, magazines, and newspapers, many very admirable examples of which are to be seen in the Long Gallery of the Victoria and Albert Museum, South Kensington. Owing probably to the extent of the material, the Board of Education has restricted the exhibition to illustrations printed with the text dating from 1860 to the present time, and this date was determined because, as Mr. H. B. Wheatley says in his useful Introduction to the Catalogue, at that date "there was a most remarkable outburst of beautiful design for the illustration of

books and periodicals, the work of the chief artists of the day, so that the period has come to be specially distinguished in the history of art as 'the sixties,' and because this period covers the time during which photography has been available for reproductive purposes, and process-work has come into being. The time selected, therefore, includes the transition period from wood to zinc, and, what is of special interest, the period during which the preservation of the artist's original drawing has been possible." The art of book-illustration is one of considerable age, and dates from the first beginning of printed books. The wood-engraved block set up with the type received earlier attention on the Continent, the first illustrated book of Caxton being "The Mirror of the World," published in 1480. The "Canterbury Tales" and "Æsop" afterwards appeared. John Day, in the middle of the 16th century, seems to have been one of the first who improved the wood block; and the name of Thomas Bewick, the reviver of the art of wood-engraving, who died in 1828, is well known as the illustrator of several books—Gay's "Fables," Goldsmith's "Traveller" and "Deserted Village," "History of British Birds," &c. He was an original artist as well as engraver. Copper-plate printing rather interfered with the progress of wood-engraving.

The gallery is divided into 26 bays and several centre screens. We can only glance at a few of these. Bay 1 is interesting as containing the chalk studies of drapery and figures by Lord Leighton, P.R.A., for George Eliot's "Romola" in the *Cornhill Magazine*, 1863. These studies, numbering 30 in all, are in black and white chalk, and characteristic of the grace and refinement of Lord Leighton. Then we have a collection of prints from wood blocks, and photographs of blocks before cutting, lent by George Murray Smith. Many of these are India proofs, from engravings by J. Swain. A few are photographs of blocks. "Tessa at Home," "At the Well," "The Dying Message" (51-53), "Samson at the Mill," a pen drawing and proof from wood-engraving by the Brothers Dalziel, lent by the firm, are very beautiful examples. The illustrations to "Old Kensington," in the same magazine, by G. D. Leslie, R.A. (76 to 87), and examples by John Collier, Mr. Staples, Sir Joseph Noel Paton, Marcus Stone, R.A., are of considerable interest in tracing the progress of the art in which the best artists were engaged. In Bay 2 we see illustrations to the *Cornhill Magazine*, 1862, and Moxon's edition of Tennyson's "Poems," by such eminent men as Fredk. Sandys, W. M. Thackeray, Luke Fildes, R.A., Sir J. E. Millais, P.R.A., Frederick Walker, A.R.A., and William Holman Hunt—all worth attentive study. We have not only the reproductions, but the original drawings. The interesting Scriptural illustrations by Millais to "The Parables of Our Lord," such as "The Foolish Virgins," "The Good Samaritan," "The Lost Piece of Silver," "The Prodigal Son," &c.; and Millais' illustrations to Tennyson's "The Talking Oak," and "Locksley Hall" (Moxon), are here, as well as illustrations to *Punch*, 1865. Fred. Sandys' illustrations for *Good Words* and *Once a Week*, and those to poems in the *Cornhill Magazine*, 1862, are extremely interesting. Some of these are proofs by Dalziel, wood engravings by Swain (118-125). In this collection we observe that the prints, woodcuts, and "process" have been considered first, then the artists' drawings, though these latter have a singular and unique interest. The student here sees as he goes on the progress made since the sixties by the camera and the process engraver. Previously the artist had to think of every line he made, not knowing whether the wood-cutter could interpret him; but the "process" has removed this difficulty.

Frederick Walker's illustrations for the *Cornhill Magazine*, 1862-1868, as "Out in the Garden," in the "Story of Elizabeth," Guy Griffiths in "Beauty and the Beast," "Thanksgiving," in "The Adventures of Philip," are very admirable examples of the graceful composition of this artist and the wood-engravings by Swain. They are shown by three photographs of wood blocks previous to cutting. The illustrations to *Punch Almanacs* 1866 and 1867 and those to "English Rustic Pictures" (1882), as in "Summer Days"—boys bathing—and "Our Little One," a pen drawing on wood block, uncut, with engravings by Dalziel 1866, 1867, are full of pathos and delicacy. The illustrations to "English Rustic Pictures," by G. J. Pinwell, and to "Wayside Posies" 1867, *Once a Week* 1869, as in "Sailor's Love," "A Paris Pawnshop," "A Seat in the Park" (214-216), show pencil and brush drawings, with wood engravings by Dalziel and Swain. There follow in successive bays many illustrious names. George Cruikshank is represented by illustrations to Ainsworth's "Windsor Castle" (1875). There are pen and pencil and pen and wash drawings and engravings by T. Bolton and Dalziel. Sir John Gilbert in Shakespeare (226), and wood engravings by Dalziel and Swain; Sir Edward J. Poynter, P.R.A., in "Dalziel's Bible History," pen drawings and engravings by the same; Ford Madox Brown and G. F. Watts, R.A., for the same book, are here. A. B. Houghton's drawings for Dalziel's "Arabian Nights" have much charm and grace. Some delicate pencil sketches by Sir John Tenniel for *Punch*, 1894 (268, 280), and to "Ingoldsby Legends," deserve notice. Geo. du Maurier is represented by several well-known *Punch* illustrations; his pen drawings are also known to many. The names of other illustrators of eminence are Charles Keene, whose work on Thackeray's "Roundabout Papers" and in *Punch* may be named; Sir James D. Linton, F. Dicksee, John Pettie, Birket Foster, W. Small—all represented in Bay 5. The pen drawings and crayon and brush drawings are interesting, especially the spirited and clever pen drawings of Lady Butler (Miss E. Thompson), illustrating Thackeray's "Ballads" and the *Graphic* 438-441, and the water-colour drawing of G. H. Thomas (442) of an old horse, "The Last Lot," in the *Graphic*; the vigorous dash and spirited wash drawings and engravings for the *Illustrated London News*, by R. Caton Woodville; wash drawings and "process" work of F. Brangwyn in the *Graphic*, of W. S. Stacey in the *Strand Magazine*, of A. S. Hartrick on the *Pall Mall Magazine*, and the very clever pen and brush drawings of Arthur Rackham for "Grimm's Fairy Tales," are interesting examples of prints from process line block. In all these we can contrast the methods employed by men of eminence in their art;—the delicacy of Tenniel's pencil work, the broad and effective black and red crayons of Hartrick, the bold wash drawings of Woodville, Dudley Hardy, and Hal Hurst, and the different effects obtained in the engraver's reproductions and half-tone processes. The "process" work illustrations show a decided broader treatment;—the artist was not restricted in his work, for the "process" method lent itself to greater freedom of line and of handling. The prints in half-tone process and from process-line blocks are interesting to follow, but are too numerous. The pen and brush drawings of W. E. F. Britten (Bay 12), of A. Beardsley for "Le Morte d'Arthur", of Lucien Pissarro, of R. Anning Bell, Phil May, Dudley Hardy, and others on the screens are full of character, vigour, and charming inventiveness, and their reproductions or prints equally excellent. We notice the process line prints from the crisp pen drawings of F. L. B. Griggs (Bay 10), the foliage and trees sharp and bright. These works show the greater bold-

ness as well as delicacy in detail secured by the "process" method. On the other side of gallery are several very beautiful examples of French and Spanish illustration, to which we can only refer. The architectural subjects are chiefly represented by Messrs. H. W. Brewer, E. Fitton, and J. Pennell (American). We have also examples of E. A. Abbey in the American bays. The work of C. Verger (Spanish), water-colour drawings and prints from colour process blocks (1289), of M. Benedito, oil painting and colour process, and the French pen and wash drawings of Adrien Moreau, A. Guillaume, Daniel Vierge, Pierre Georges Jeanniot, and B. de Monvel are very spirited and splendid examples of the art. Nothing can be more effective than D. Vierge's "Misère à Londres," "Gathering Grapes" (1319-1320), and the wash drawings of "Plasterers at Work" (1322), lent by the artist; but we take leave of the exhibition, with the hope that many will pay it a visit. Its chief instructional value is that we can trace the development of the art of illustration from the wood-cut era in its best period to the "process" method, and the influence these technical methods have had upon the art of drawing for typographic work. We hope the Board of Education will see fit to continue these exhibitions of art methods of reproduction.

PICTURES OF OLD LONDON.

LAST Saturday Messrs. Christie, Manson, and Woods sold at their rooms a unique collection of oil-pictures, the twenty-one pictures realising £2,213. These pictures reveal many interesting changes. Six of these are by Canaletto, and include the "City Monument," showing the old brick houses of superior type with projecting strings, wood cornices, and parapets, and having the old white flush-framed windows. This picture is one of the best, and fetched 135 guineas. "Westminster Bridge," "Somerset Place," "St. James's Park," "St. James's Place" (which fetched 240 guineas), "Northumberland House" are other works by Canaletto. The view of "Somerset Steps" is a river embankment view, showing St. Paul's Cathedral and the steps to the river as they then appeared. "Old London Bridge" is a picturesque view of the old bridge and houses, and is by S. Scott, and realised 190 guineas. "Buckingham Gate to Blackfriars Bridge," is also by Scott, and is an extensive river view. The view of "Smithfield," by J. Boydell, is interesting as showing how much its character has altered since the time of George III. "Skinner Street" is another of Boydell's canvases, and is of interest in the old timber overhanging house. "Lambeth Palace" is by the same hand, with its green sward enlivened by gentlemen and ladies of the period, with their lace-trimmed coats, cocked hats, and knee-breeches, and extended farthingales; so also is "Old Palace Yard." Equally interesting are the views by E. Dayes of "Bloomsbury Square" and "Putney Bridge," with its curious church front. Other subjects include "Chelsea Church," by Boydell; "St. James's Park," by J. B. Chubb; "Charing Cross," by Boydell; "Leicester Square," by E. Dayes; "St. Dunstan's Church," by T. Malton. Messrs. Agnew purchased several of the pictures.

ELEMENTARY ART EDUCATION.

THE first of a course of four Cantor lectures on "Elementary Art Education" was given by the Society of Arts on Monday night by Mr. J. Liberty Tadd, director of the Public School of Industrial Art, Philadelphia, U.S.A. Mr. Walter Crane occupied the chair. The lecture was concerned with art and manual training in general education, and Mr. Tadd discussed the methods and results of the system introduced by Mr. C. G. Leland into Philadelphia twenty-two years ago. At first the work was experimental, but now that its advocates had the grown-up product to prove the success of the methods pursued it was spreading as rapidly as teachers could be trained, and they were glad to publish their results. The system was entirely different from that carried out in other schools, and its aim was the development of the whole organism—hand, eye, and



HULL CREMATORIUM.—MR. A. E. WHITE, City Engineer, Architect.

mind—by the acquisition of conscious control, to be followed by automatic control. Various exercises had been tried at different times, but they had now settled down to four—drawing, designing, clay modelling and wood carving. The desire was to give the pupils facility of hand, sense of balance, size, and proportion, &c., and to make these qualities automatic. Teachers of the system claimed to be able to teach every possible physical co-ordination if only they got the child at the proper period of growth and development. Young children of five or six would be set to draw, for example, large circles on a blackboard—first with one hand, then with the other, then with both together, in the same direction, and in either direction. Of course, the circles were not exact; but the first object was to get facility, and accuracy followed. Drawing in this way on the blackboard was alternated with drawing on paper, in soft clay, and in tough wood—all to gain facility. Then the children were given some unit, such as a spiral or leaf form, and required to make designs from it, in order to develop sense of balance, proportion, &c. The copying of nature forms followed, and in course of time, by repetition of experiences, drawing became to them a mode of thought expression. The result was a race of children whose memories were photographic. Except in late stages, where specialisation was beginning, instruments of precision, such as measures or compass or ruler, were never allowed, nor was rubbing out permitted; the results in consequence showed a swing and freedom not otherwise attainable. Mr. Tadd showed numerous photographs illustrating the methods and results of the system in various schools. The fact was emphasised that none of these were art schools, but merely public schools of various grades in which a few hours a week were devoted to this method of art and manual training.

HULL MUNICIPAL CREMATORIUM.

THE first definite steps towards the erection of a crematorium in Hull was taken in 1892. It is the first municipal establishment of its kind erected in England. The council at this time contemplated the erection of a chapel in the Western Cemetery. The borough engineer suggested the modification of the plans so as to include a crematorium. The suggestion was adopted, and when the chapel was erected in

1896-7, foundations were put in for a furnace chamber and chimney tower, so that these might readily be added at any future time.

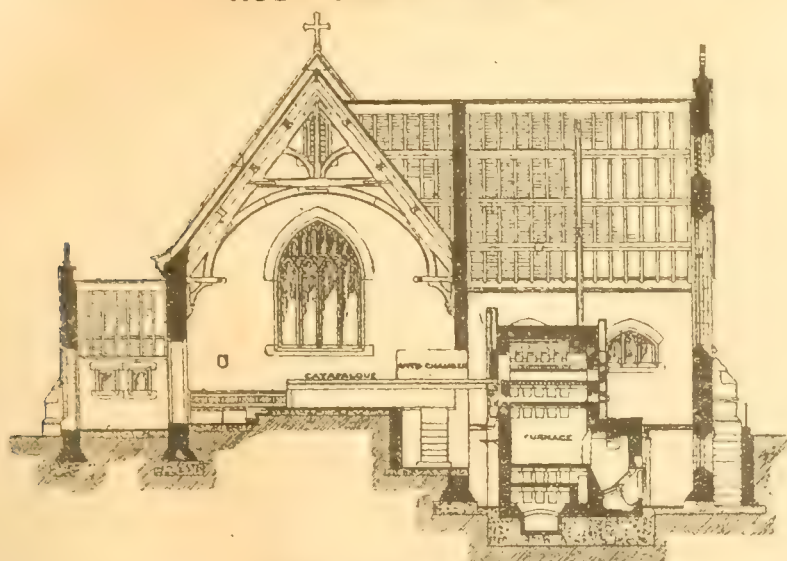
Meanwhile, as it appeared doubtful whether municipal authorities could legally expend money on crematoria, it was decided to apply for Parliamentary powers, and clauses with this object were included in a Bill (the Kingston-upon-Hull Improvement Bill), which the corporation were promoting in 1897. These clauses set forth specific sites for crematoria—viz., the Western Cemetery and certain surplus land adjoining the Hedon-road Cemetery. There was some slight opposition to the former site, and as the Bill was only reached very late in the season, it was found necessary that the Act as passed should only authorise the Hedon-road site.

In due course the borough engineer was instructed to prepare plans for a building on the accepted site, and the memorial stone was laid on October 30, 1899, by the chairman of the burial committee, Mr. Councillor Solomon Cohen, in the presence of a thoroughly representative gathering. The gathering included clergy and ministers of almost all shades of opinion, who showed a remarkable unanimity in their approval of the corporation. The building was opened on the 2nd inst.

The crematorium is situated on a piece of land to the north-east of the Hedon-road Cemetery, which formed part of a larger plot purchased for the extension of the cemetery; but, being adjacent to the Sanatorium, was not laid out for burials. The entrance to the grounds is through the cemetery, and the building and grounds are under the care of the cemetery staff. The cemetery chapels are available for religious ceremonies in cases where the number of mourners is larger than the crematorium will accommodate. The building is of red brick externally, with artificial stone dressings, and is in a Late Gothic style, freely treated. It comprises a hall or chapel 24ft. square, a second room containing the incinerating chamber, and a tower 70ft. high.

The cremating apparatus is a furnace of the regenerative type designed by the late Mr. Henry Simon, President of the Manchester Cremation Society, and has been built from plans by and under the superintendence of Mr. A. E. White, M.Inst.C.E., the city engineer and surveyor of Hull. Described in the briefest possible manner, it consists of three interior chambers, the two lower of which are surrounded by air-passages. The lower chamber contains a coke fire, and the upper one is that in which cremation takes place.

HULL CREMATORIUM.



LONGITUDINAL SECTION.

Scale of Feet

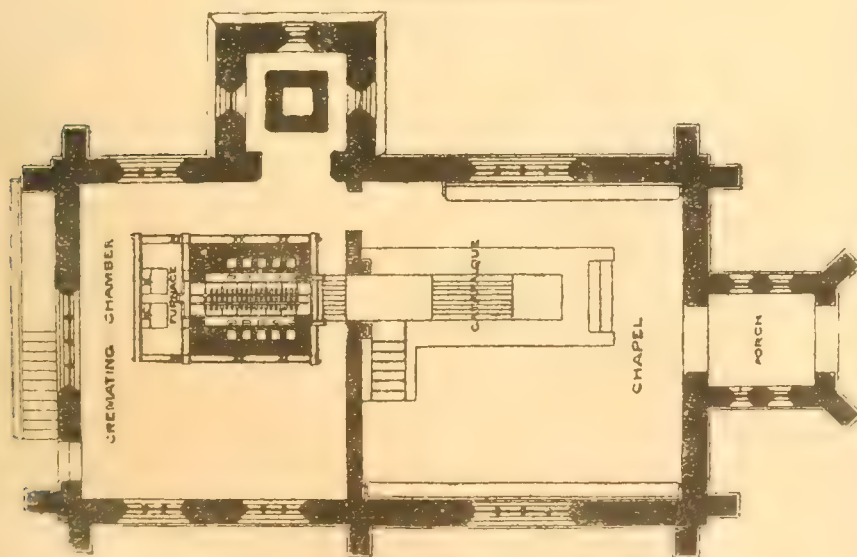
Feet 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

The fire is lit some hours before the apparatus is to be used, and is supplied with air in the usual way. By the time the apparatus is ready for use the walls of the air-passages are thoroughly heated. Most of the direct air supply is then cut off, and the partially-consumed gas (carbonic oxide) from the coke is allowed to mix in the second chamber with the air heated by passing through the side air-passages. The incinerating chamber is thus filled with gas of an intensely oxidising character in a state of incandescence. The degree of heat can be regulated in the most exact manner. There is no smoke and little visible flame before the body is introduced, and

mourners. The coffin, when brought into the chapel, is placed upon a catafalque. When the committal sentence in the religious service is reached, it passes noiselessly by means of an invisible mechanical arrangement through curtains into an intermediate chamber, and the curtains fall behind the coffin before it enters the cremating chamber.

The remains may afterwards be disposed of in the following amongst other ways:—They may be placed in a family grave, a newly-reserved grave, or a grave reserved conditionally. They may be placed in a "public" grave. They may be placed in niches on the exterior or interior

HULL CREMATORIUM.



PLAN.

Scale of Feet

Feet 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

if the coffin is made in accordance with the directions given, there is equally no smoke and no noise during cremation. The process occupies about one hour, at the end of which there remain only the inorganic bases of the bones. This is in the form of silver-grey pumice-like fragments. It is removed by passing an asbestos brush through the chamber, which causes the remains to fall through an opening into the urn which is to receive them, and they are not otherwise handled in any way.

It should be explained that the interior of the cremating chamber is at no time visible to

wall of the crematorium or of any of the cemetery chapels. They may be removed to other churchyards or cemeteries, and in many cases arrangements could be made for placing them on the walls of churches or chapels; or, with the consent of the Home Secretary, in family vaults in churches, chapels, or burial grounds closed for ordinary interments. Columbaria may be constructed for them on the ornamental grounds at the entrance to either of the corporation cemeteries, or on private grounds. In the former case, the designs must be prepared by an architect or artist and approved by the burial committee,

who will, under no circumstances, approve designs of a stereotyped sepulchral cast. They may be scattered over the surface of land or water.

Absolutely no practical objection can be raised to the practice of cremation, and a close knowledge of the process is bound to remove any objection on sentimental grounds.

Probably burial in a dry gravel grave is what most persons have in their mind as the ideal method of disposing of the dead, and provided that a proper space can be given for each interment, and the remains can be insured against disturbance, resolution into gases and inorganic elements occurs. This ideal is, however, realised in very few cases indeed. In cremation almost exactly the same process takes place, the principal difference being that it occupies minutes instead of years. The incandescent gases brought in contact with the body, part with their oxygen, which combines with the organic matter of the body precisely as the oxygen of the atmosphere behaves in the ideal dry grave. The process of decomposition in a clay grave or in a vault is entirely different, and need not be discussed.

SOME RAILWAY BRIDGES.

At the ordinary meeting of the Institution of Civil Engineers on Tuesday, the 18th ult., three papers were read, entitled "Glasgow Bridge," by Mr. Benjamin Hall Blyth, M.A., M.Inst.C.E.; "Railway Bridge over the Fitzroy River at Rockhampton, Queensland," by Mr. Walter James Doak, B.E., Assoc.M.Inst.C.E.; and "The Niagara Falls and Clifton Steel Arch Bridge," by Mr. Leffert Lefferts Buck, M.Inst.C.E.

Mr. Blyth's paper dealt with the taking down and rebuilding of the bridge over the Clyde at the Broomielaw, Glasgow, constructed by Telford in 1833. It mentioned the reasons which induced the corporation of Glasgow to obtain, in 1892, an Act of Parliament for the construction of a new bridge of four spans, and later, in 1894, to obtain another Act, repealing the former and authorising a bridge to be built which, while considerably increasing the width and strengthening the foundations, still preserved Telford's original elevation. The bridge as rebuilt, consisted of seven spans varying between 52ft. and 58ft. 10in. Each of the piers was carried by four 15ft. cylinders, which were sunk by means of pneumatic pressure to a depth of 75ft. below springing-level. Centring was provided for all the seven arches, and all the arches were completed before any of the centres were struck. The piers were of freestone masonry faced with granite, and the arch-stones were granite throughout. Provision was made for gas, water, and electric mains under the pavements. The work was begun in 1895, and completed and opened for traffic on May 24, 1899.

Mr. Doak's paper described the railway bridge over the Fitzroy River connecting the central railway system of Queensland with the deep-water port of Broadmount. It carried a double line of way of 3ft. 6in. gauge, and consisted of two 250ft. spans and three 100ft. spans. The open-caisson method was adopted for sinking piers Nos. 1 and 2 in the river bed, piers Nos. 3 and 4 being on land. The caissons were of wrought iron with straight sides and semi-circular ends. The framework of channel and T-bars was covered with buckle plates, 4ft. square, wherever possible, and with plain plating elsewhere. The excavation for sinking was carried out by divers, as were also the concreting operations. Concrete in bags was first laid round the inside edge of the caisson, and the filling-in up to low-water level was accomplished by lowering the concrete through the water in skips. The rest of the concreting was performed in the open air in the ordinary way. For the 250ft. spans a hog-back Linville truss was adopted, the curve of the top boom having a radius of approximately 538ft. The depth of girder at the ends was 16ft. 6in., and at the centre 30ft. 9in. The web-bracing consisted of a double system of vertical posts and inclined ties. The cross-girders were suspended to the lower ends of the vertical posts by tongue plates. The main girders were 26ft. apart from centre to centre. The deck was of the American type, the rails being laid on iron-bark sleepers carried by steel longitudinals, riveted at the ends to the webs of the cross-girders. Upper and lower lateral bracings and vertical away bracings were provided, also heavy portal bracings. The 100ft. spans were carried by simple rectangular

L'ville trusses, 16ft. 6in. deep, with a single system of web-tracing panels. A footway, 1ft. wide, was provided on the downstream side, carried by a light latticed parapet-girder resting on the ends of steel cantilevers riveted to the ends of each cross-girder. The 250ft. spans were built on staging mounted on four trolleys. They were then run forward to overhang, and a hulk was placed under the end at low water, and lifted the end of the span on the tide rising. Span and hulk were then hauled across the opening, till the end of the span projected over its position on the centre pier. On the tide falling, the span came down on to its bearings and the hulk was removed. The main girders were designed to carry on each track a train-load of 0.66 ton per lineal foot, preceded by two B15 engines weighing 51.7 tons each. In floor-beams a working stress in tension of 7.5 tons per square inch for dead load and 5 tons per square inch for live load was adopted; in main girders 7.5 tons per square inch for dead load and 6 tons per square inch for live load.

Mr. Buck's paper described the bridge crossing the Niagara river between Niagara Falls and Clifton, about 300yd. below the American Fall, and about three-quarters of a mile below the great Horseshoe Fall on the Canadian side. The first structure on this site was a suspension-bridge erected by the late Mr. Samuel Keefer, M.Inst.C.E. This had been widened and subsequently rebuilt by the author, and when the question arose of further increasing its capacity to provide for the passage of electric trolley-cars, the author recommended the substitution for it of the steel arch bridge described in his paper. The river at the site of the bridge being 180ft. deep, and having a current of between four and five miles per hour, falsework was out of the question. Notwithstanding the large span of the new bridge, it was calculated that not only would it cost considerably less than widening and strengthening the old suspension-bridge to a similar capacity, but it would be stiffer and stronger. For several reasons it was decided to brace the ribs instead of the spandrels of the arch; but the author doubted whether a braced-rib arch was as economical as one with braced spandrels, and, after experience of both types, favoured the latter where it could be used. The bridge consisted of a main span of 840ft. and two end spans, one of 190ft. and one of 210ft. The main span was a two-hinged parabolic braced-rib arch, supporting the floor-system by means of vertical bents resting on the top chords of the arch at the main panel-points; the end spans were pin-connected inverted bowstring girders. The material was basic open-hearth steel, required to have an ultimate tensile strength of 62,000lb. to 68,000lb. per square inch, an elastic limit of at least 33,000lb. per square inch, and an elongation of at least 20 per cent. on an original length of 8in. The bridge carried on one level two lines of trolley-car tracks, two carriageways outside the car-tracks, and two sidewalks. The floor was not horizontal, being 8ft. 6in. lower at the Canadian end than at the New York end. For the abutments, 1,417 cubic yards of concrete, and 220 cubic yards of masonry were required; the small amount of masonry needed showed the natural advantages of the site for an arch bridge. The abutments on the New York side rested on solid sandstone rock, and it was expected that the foundations on the Canadian side would be similar; but excavation showed the material underneath the abutments to consist of boulders, ranging from pebbles to blocks several cubic yards in size, closely imbedded in a matrix of gravel. On this material foundations of concrete were built, with flaring sides to give ample base, extending back to the vertical face of the solid rock. The factors of safety throughout were large, the abutments being built with a view to providing for an increase of 25 per cent. in the loading, should it become desirable to increase the capacity of the superstructure in the future. The rise of the arch, from the centre of the end pins to the centre of the rib trusses at the crown, was 150ft. The span was divided into twenty main panels of 42ft. each, each of these panels being divided in the ribs into two equal sub-panels. The top and bottom chords of the arch ribs were united in solid web-sections at 10ft. 6in. from the centres of the end pins. These web-sections and the end-posts bore on steel castings, which in turn bore on pins 12in. in diameter and 5ft. 10in. long. The pins were supported by cast-steel shoes, resting on seats in built steel

shoes, arranged to distribute the pressure uniformly over the faces of the masonry abutments. The details of the end bearings and of the systems of bracing were fully described and illustrated in the paper, and the methods of calculating the stresses in the arch were described in an appendix. The bowstring end spans had been used because the rock on each side of the river was stratified, the strongest and most durable portion occurring at the top; and had the top stratum been cut away to make room for deeper end spans, the rock below would soon have crumbled and disintegrated. The end spans were erected first by means of falsework and next the end bents of the main span were raised. The tops of these bents were connected to anchorages formed in the solid rock some distance back from the face of the cliff. The anchorage connections were formed partly by the top chords of the end spans, and partly by eye-bars, an adjusting toggle being inserted close to the anchorage. The several panels of the arch rib were then built out from the abutments, each panel being connected to the top of the end bent by a set of fore-anchorages. When the two halves met and were connected together by the centre pins in the bottom chord, the three-hinged arch thus formed was converted into a two-hinged arch by means of hydraulic jacks, with which the top chords were forced apart at the centre until the requisite stress for the amount of dead load then carried was imparted to them. It was calculated that this would require a pressure of 375,000lb. to be exerted on each top chord, and the openings between the ends of these chords had to be increased from 3in. to 6in. by direct compression. This anticipation was exactly realised, thus testifying to the accuracy of the calculations, shopwork, and field measurements. In the erection of the bridge considerable use was made of the old suspension bridge adjoining, which was kept intact as long as possible, the travellers for the new work being supported on the top chords of the stiffening truss of the old structure. Although, according to the worst conditions previously known, danger from water and ice was amply safeguarded, an ice-jam exceeding all past experience occurred in the course of the construction. The ice was swept against the steelwork adjacent to the abutments, and on each side four members were badly bent, but no other damage was done. To guard against similar trouble in the future, heavy concrete walls were built around the abutments, and the first two panels of laterals in the plane of the lower chords on each side of the river were changed from latticed to plate-web struts.

THE FUTURE OF THE LONDON WATER SUPPLY.

THE discussion of Mr. Middleton's paper on the above subject was resumed at the meeting of the Surveyors' Institution, held on Monday evening last (the president, Mr. J. Shaw, in the chair), by Professor H. Robinson (Fellow), who said he proposed to confine his remarks to one point—the utilisation of the Thames as a source of water supply to London, but he advocated a different system from that recommended by the author. He agreed with storage reservoirs, but they should be formed not artificially, but by utilising the natural valleys, of which many were available. He could show by actual figures that the cost of such a method of gravitation storage was infinitely less costly in establishment and working, and greatly more efficient, than a system of artificial reservoirs, which involved the use of pumps, that in times of flood could do no more than at ordinary times. Since he had laid his views before Lord Balfour's Commission, he had not changed them at all, but his opinions had been entirely confirmed by the subsequent experience of others as well as his own. He estimated that storage reservoirs such as he advocated could be constructed in the tributaries of the Thames—for 15,000 million gallons at a cost of £850,000, or for 55,000 million gallons at a cost of £1,640,000, and by the construction of one of the latter capacity a flow of 600 million gallons a day could be maintained = 200 million for the weir, 300 million for the water companies, and 100 million for future development. At a cost of £2,400,000, he could give a flow of 700 millions gallons a day. When he was before the Commission, the geological survey maps were against his scheme; but he had since proved by repeated experiment that an

impervious bed of clay lay under and around the valleys he had in his mind, rendering them entirely watertight. It was a fact that flood-water was objectionable to store, but in the valleys he referred to the water flowing off would be much less liable to contamination than that in the main stream. Lord Llandaff's commission in their report certainly favoured some such scheme as his own, and every year's experience went to strengthen his belief that it was the true solution of the problem. He had no prejudice against the water companies, who would benefit by a clearer and more regular supply at the intakes. The river, as a navigable river, would certainly benefit, and the flow would be maintained regularly.

Mr. H. H. Statham said it appeared that the main idea of water engineers was to cut down the supply of water to the consumer to the lowest possible minimum, until it was quite insufficient from a sanitary point of view. The matter being in the hands of private companies, it seemed to be their endeavour not to give as much as they could, but to compel the consumer to do with as little as possible. A suggestion was made not long ago that if waste were reduced, 25 gallons per head per diem would be sufficient. This seemed like an echo from the "antediluvian" days of a century ago. An ordinary bath for total immersion, which was the only real bath, required some 60 or 70 gallons. It was true that the lower classes were often dirty and used little water, but should they not be given every possible opportunity to improve in this respect? The best preventive of waste was supply by meter, and if it were objected that this would make the poor more sparing of water than ever, he would suggest charging small holders by rate and larger occupiers by meter.

Mr. R. Hassard spoke as the originator and designer of the Welsh supply scheme, to which no one but himself had the slightest title. His plan was to take the main bulk of the supply from the Welsh mountains, bring it by gravitation to London in such a way as to supply localities 300ft. above O.D., and with it to mix some 30 million gallons per day of water from the Cotswold Hills, thus producing a water which, while not so soft as the Welsh water, was an ideal one for culinary, drinking, or trade purposes. The Welsh water had only about 2° of hardness, while the water he proposed to introduce would have about 5°. He very much doubted whether the population of London would ever reach the estimated 18 to 30 millions. He calculated, from all the data available, that the maximum it would ever attain would be 12 millions, and at that figure the cost of his Welsh scheme worked out at a capital outlay of £3 4s. 6d. per head, about the same as that incurred at Liverpool and Birmingham. If the necessary £38,000,000 were borrowed at 3 per cent., repayable in fifty years, at the end of that time all capital payments would cease, and meanwhile the consumers would be supplied at the rate of about 2½d. per thousand gallons. If the money were raised at 2½ per cent., the cost would only be 2½d. per thousand. The idea, therefore, that the scheme involved ruinous taxation was altogether unfounded.

Mr. L. T. Vernon Harcourt said that whatever else might be said of the Welsh scheme, there could be little doubt that the water would be purer than that now supplied. His experience was that, with the exception of the Cherwell, there were few tributaries of the Thames with sufficient fall for the purposes of gravitation reservoirs, as Professor Robinson suggested. He, of course, agreed that while a copious supply was essential, waste should be prevented. The question of increase of population could be only a matter of assumption; but it was, perhaps, the only basis on which to forecast the future. The increase of population above the intake in the Thames valley was, however, a serious one. If ever Wales were to furnish the supply, it might be well not to defer obtaining a site there until it was too late.

Mr. C. Bagallay, Q.C., said he feared speakers were digressing from the main point, which was, Should we utilise the supply which nature had brought to our doors, or go elsewhere for our water, possibly at great cost? On the point of meter supply, he remembered that Norwich had adopted that system, but had given it up, as it proved to be a premium on dirt. It must not be overlooked that Parliament had already empowered the East London Co. to impound the whole of the waters of the Lea.

Mr. J. Lucas very much doubted whether London would or could ever reach the size contemplated by the author. It had been shown that the curve of increase in all large cities tended to get flatter and flatter until a point would be reached when increase would cease. He could hardly agree with all Mr. Middleton's figures. He entirely agreed on the necessity of giving one enlarged reservoir accommodation at or near Staines; but while there should be no restriction on the area of land to be impounded, he thought a strict limit should be placed on the height, for it was the depth of the water and not its area that constituted danger to the localities below.

Mr. H. Ashton Hill said that while few people cared for the question who should control the water supply of the metropolis, everyone must be interested in the adequacy of the source of that supply. The paper was an able advocacy of the "Home supply" scheme, which, of course, had many arguments in its favour; but seeing that even the author admitted that in time we should have to go further afield to obtain a sufficient supply for the growing population, it was hardly possible to begin too soon, for the construction works would take many years to complete, and the time was not far distant when the demand seemed likely to overtake the possible supply from present sources. He, having had long experience of deep-well supplies, doubted if they ought to be too much relied on. Such a scheme as Mr. Middleton's, which involved a future draught of 384 million gallons from wells, would necessitate some 200 pumping stations, the erection and maintenance of which would cost a ruinous sum, and would be liable to many uncertainties and failures. On the other hand, the Welsh scheme involved no uncertainty, and its cost could be calculated with a fair degree of accuracy.

Mr. S. H. Cowper-Coles, speaking as a land agent in the district of Wales, from which it was proposed to draw the supply of water for London, warned intending promoters of any such scheme that they would find fishing rights very much more costly to purchase than was often assumed to be the case. As to the quality of the water, a careful inquiry of a Liverpool man, for instance, as to how he liked it, and how peat tasted, would elicit a reply which might open some persons' eyes.

After a few remarks by Mr. W. Morris, the discussion was further adjourned.

HOUSING OF THE WORKING CLASSES.

A LECTURE on "The Housing of the Working Classes" was given before the members of the Sheffield Society of Architects and Surveyors by Mr. H. Potter, A.R.I.B.A., at the School of Art, Sheffield, on Thursday evening in last week. Mr. J. Smith presided. The lecturer said that the difficulty of obtaining houses, and the prevalence of overcrowding in the neighbourhood of London and elsewhere, had during recent years caused the subject of housing the working classes to be brought very prominently before the public. In introducing the subject, he did not intend to discuss the social or political side of the question, but to touch on the difficulties that architects had to contend with to recognise the natural requirements made by owners as well as tenants, and to see how they could best serve the interests of both—the latter quite as much as the former—by giving over a good security for his outlay, and the other the best accommodation possible for the rent he has to pay. In providing dwellings for the working classes, one of two methods was generally adopted—either to build blocks of four or five-storied tenement buildings in the centre of a town, or to erect cottages in suburban districts, to accommodate one family only, or at any rate not more than two. He proposed to limit his paper to the consideration of the latter class—viz., small houses to be built either semi-detached, in blocks of four, six, or eight, or even in larger terraces. In a locality with a large working-class population earning good wages, there must be a steady demand for this class of residence, and owing to the existence of an excellent service of electric trams and cheap fares, Sheffield possessed one of the best aids for solving its own housing problem, for by this means there was easy access to the suburbs, enabling a working man to live where he and his family could enjoy a house and a reasonable space of ground to themselves, pure air, and be within easy reach of the country,

instead of at a suite of rooms in a lofty tenement building, situated in the centre of the city. But there were probably here, as in most towns, a certain number of men who, owing to the nature of their calling, must live in the heart of the business centre, and for these an excellent scheme was now being carried out by the Corporation in the Crofts area. There were many difficulties to be contended with by architects in designing these houses, which were all due to the important consideration of cost or the rent the occupiers can afford to pay, this being influenced by (1) the frequently high price of land; (2) the increased cost of labour and material; (3) the adoption of more stringent building regulations by all sanitary authorities. In reference to the last, no objection could be raised to by-laws that tended to check unsound and unsanitary buildings, but architects felt at times that they added unnecessarily to the cost. In this respect Sheffield enjoyed privileges in two important instances—viz., it was permitted to have two stories and rooms in the roof with a 9in. external and party-wall, and it was not necessary to carry the party-walls through the roof for a height of 15in. After giving some instances, the lecturer briefly referred to some points that arose in laying out estates. He suggested that, instead of large owners and public bodies cutting up the land at the rear of the houses into small strips for so-called gardens, each house might have a small yard, and the remaining land be kept as one large open space for the benefit of all the adjoining houses. With sites 70ft. or 80ft. deep, a space 40ft. to 60ft. wide could be obtained, extending the entire length of the houses, which would form an excellent playground for the children, would facilitate the drainage, give good access to the rear of the premises for the delivery of fuel and collection of refuse, and save the loss of frontage caused by providing for this in the ordinary way. After making a few remarks about roads and the length of time these were sometimes allowed to remain in an unfinished state, the lecturer discussed the planning of these small houses in detail. He referred to a series of plans shown in the room illustrating houses occupying frontages of from 12ft. to 16ft., beginning with four-room cottages for one family, and gradually increasing in size up to six and seven rooms. Then followed plans for double tenements, representing a class of house for which there is an increasing demand in industrial centres. They consist of ground and first floors arranged in "flats," each having a separate front entrance, and being self-contained in every respect. They met the requirements of a large class of people who are unable to pay the rent required for single tenement houses, and avoided the inconveniences that arise if two families share a house that was originally intended to be occupied by one. In conclusion, the lecturer referred to the external treatment of these houses, and in making a plea for a more careful consideration of this part of the subject, showed drawings illustrating the use of different materials in a simple but effective manner.

The lecture was illustrated by numerous drawings. A discussion followed, and, on the motion of Mr. E. M. Gibbs, seconded by Mr. W. C. Fenton, and supported by Messrs. T. Shaw and the Chairman, a hearty vote of thanks was accorded to the lecturer.

PURIFYING SEWER GAS.

MANY are the methods adopted to ventilate the sewers of our large town, in no one of which have we reached perfection. The latest contribution to the solution of the problem is the invention of Mr. Ralston, of the firm of Messrs. J. Stone and Co., of Deptford, known in the shipbuilding circles for their Navy bronze fittings and propellers. The system has the advantages of simplicity and cheapness. A tank is fixed at the upper part of the drain to be ventilated, and when the valve is opened the water is so directed as to create a partial vacuum. This draws sewer gas from the drains, fresh air through an inlet opening into the road, and water from the tank. The sewer gas is thus washed by the action of the water and further purified by the fresh air, escaping in a harmless condition through an outlet pipe. The water containing the impurities runs away through the overflow pipe to the sewer, and there is a float valve which automatically closes the apparatus when storm water charges the sewer. It is claimed that 10,000 cu. ft. of

noxious gas can be drawn from the drain, purified, and passed into the outer air at a cost for water of about 1s. 6d. Moreover, as the method will only be required for use at those seasons when the ordinary means of ventilation are insufficient—say the four hottest months of the year—the working expenses will be nil during the other eight.

The system has been tried for twelve months in one of the most troublesome of the Deptford sewers, and has been reported on very favourably by the engineer of the late Greenwich Board of Works. Besides this bacteriological and chemical experiments have been made with equally good results. Dr. J. T. C. Nash, of King's College, secured samples of sewer gas at this spot before and after treatment by the Stone system. Each was incubated at the laboratory for three days. The untreated air contained twenty-six colonies of micro-organisms easily discernible by the naked eye. Nineteen were moulds. That which had been subjected to the Stone method contained only three colonies, of which none were moulds. Dr. Nash concludes that all the bacteria present in the sewer air were arrested by the apparatus, and carried away to the outlet. Professor Henry Kenwood, of University College, experimented with samples taken from the same part of the sewer. The untreated air contained 0.71 per cent. of ammonium sulphide, and 0.32 per cent. of sulphuretted hydrogen. After passing through the apparatus the quantity of the first was inappreciable; that of the latter had been reduced to 0.04 per cent. Fortified by these tests, Messrs. Stone and Co. are about to bring their invention before the notice of the local authorities of the country.

DAYLIGHT REFLECTORS.

THE merits of the Chappuis Reflector in throwing the light of the sky, even on a dull day, into rooms in the basement have been demonstrated in the case of offices in New-court, Carey-street, formerly used as a restaurant. The proprietors of the building decided to do away with the restaurant and convert the basement into offices. Daylight was of the first importance, and they had fixed to two of the windows in Portugal-street a refracting prism and a Chappuis Reflector to two adjoining windows. A partition partially divides the room, so that the effect of each of these agencies in throwing in daylight could be determined without interference. A Chappuis Daylight Reflector is fixed outside one of the windows at an angle of 45°, the lower edge being about level with the meeting-rails of sashes. These reflectors, as our readers know, are highly polished patent silvered corrugated surfaces with broad flutes, fitted into strong wooden frames, and fixed in position by chains suspended from wooden reveals. The result of our inspection in this particular case is that the half of the room having the Chappuis Reflector outside the window is much lighter than the half lighted through the window with the refracting prism, and the shadows on floor made by any object are stronger, showing the great reflecting power of the Chappuis Reflector for basements and underground offices, as well as for windows opening into light areas. The reflector is particularly valuable as a means of giving light to windows opposite walls of only a few feet distance, as in the ordinary grated area, or under a skylight. One of the advantages of the reflector is that the highly-polished surface reflects the light unimpaired, while in the refracting lens a percentage of the light is lost in passing through the glass. The Chappuis Daylight Reflector is made in several qualities, the "A" quality, silvered, narrow-fluted glass, is suitable for basement rooms; the "B" quality, of patent silvered argento-crystal, is a more powerful medium, suitable for offices, warehouses, and dwellings; and the "D" quality, of patent silvered luminarium, is the most powerful reflector, made of moulded sheets of crystal, coated with pure silver. Polygonal and louvre reflectors are also made for picture galleries, and for fixing under skylights, that are worthy of the architect's attention, and the same reflector can be disposed in various other forms, as the trigonal, quadrangular, concentric, &c., for various purposes, and to utilise the electric light for shop-windows, theatres, and other special objects. The catalogue of Messrs. P. E. Chappuis, of 64, Fleet-street, furnishes illustrations, with full information and price, of the various kinds of daylight reflectors made.

ANCIENT LIGHTS.

MEMORIAL OF THE JOINT COMMITTEE OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS AND THE SURVEYORS' INSTITUTION.

THE following report has been adopted by the Council of the Royal Institute, and intimation of such adoption has been conveyed to the Council of the Surveyors' Institution:—

Whereas by a Resolution of the Royal Institute of British Architects, passed at the General Meeting of April 9, 1900, it was decided:

That this Meeting considers an alteration in the law of Ancient Lights to be urgently needed, and requests the Council to put itself into communication with the Council of the Surveyors' Institution without delay, with a view to the co-operation of that body in taking such steps as may be necessary to secure an amendment.

And whereas the Surveyors' Institution, having been invited so to do, agreed to act in conjunction with the Royal Institute and to appoint a Committee to deal with such matters:

And whereas a Joint Committee, consisting of the undersigned, have held meetings and have carefully considered the subject of the above reference:

And whereas such Joint Committee are of opinion that the law and practice of Ancient Lights is exceedingly unsatisfactory in several respects and requires amendment in the manner herein suggested:

Therefore the Joint Committee recommend that the law and practice in respect of Ancient Lights be amended as follows, viz.:—

1. The right to ancient lights shall, in all cases where such rights have not been already acquired, be limited to a right to receive light sufficient for all ordinary purposes, but shall not include a right to light of extraordinary amount for special purposes.

2. After the passing of the Act the owner of any tenement not at the time servient to some neighbouring tenement, but over which such neighbouring tenement would in course of time acquire dominant rights, may serve upon the owner of such neighbouring tenement a formal notice, in form and manner prescribed by the Act, and may advertise the same in the daily papers, and register the same at the Land Registry, where one exists, of the district, or, where no such Land Registry exists, at the offices of the County or Municipal Council of the locality. Such notice shall have the same effect as though an interruption had been submitted to for one year, and such notice shall run with the land.

3. The owner of a building which is about to be taken down may cause plans, sections, and elevations to be prepared, and such drawings if they be attested by the District Surveyor in London, or the County or Borough Surveyor elsewhere, shall be accepted as legal evidence. Such drawings shall on demand be certified and registered by the officers above named, who shall be paid fees on a scale appended to the Act.

4. No building erected after January 1, 1905, shall acquire any fresh right of light or air where it abuts on any street, highway, road, court, or alley used by the public, or as an access to various tenements, either held in the same ownership or in various ownerships.

5. The owner, lessee, or occupier of any tenement, who considers that his ancient lights will be or have been interfered with by the erection or proposed erection of new premises or alterations to old ones, shall have the right to inspect (or have inspected on his behalf) the drawings which shall be prepared by the building owner of the premises which cause such interference; or if no drawings are in existence, to be informed of the intentions of the building owner, and to take or have taken such particulars from the drawings or information or from the building itself, if erected, as may enable him to ascertain where there is ground for complaint.

6. If such neighbouring owner, lessee, or occupier considers that the lights of his premises will be interfered with, he shall, within seven days from obtaining such information as aforesaid, give notice in writing by registered post of his objection to the building owner, together with the name and address of a surveyor who shall have power to act on his behalf.

7. Within seven days of the receipt of such notice the building owner shall acknowledge the said notice, by registered letter, and inform the

person from whom he received notice of objection of the name and address of his surveyor, who shall also have power to act on his (the building owner's) behalf.

8. Such two surveyors so appointed shall, within ten days of the date of the appointment of the last of them, select and appoint an umpire under their hands in writing, such umpire being a member of the Royal Institute of British Architects or of the Surveyors' Institution. The first-named two surveyors shall within the like period meet and discuss the points raised by the owner, lessee, or occupier, with a view of settling the same, and failing coming to a settlement they shall refer the matter to the umpire appointed as aforesaid. The said umpire shall view the site and buildings of both plaintiff and defendant, and shall have power to take such evidence upon oath as he may think necessary, and he shall, within twenty-one days from the date of the matter being placed before him, or within such extended time as he may from time to time determine, issue his award, in which he shall determine either or all of the following points: the right of the building owner to carry out his intended works, the alteration (if any) necessary to be made in carrying out the proposed new buildings or alterations to prevent or lessen the obstructions complained of, and the amount (if any) of compensation of every description to be made to the owner, lessee, or occupier, the alterations or improvements to the adjoining premises by light-reflecting surfaces, enlargement of lights, heightening of premises, or other means, the amount of costs to be paid by each or either party, and generally all matters required to arrive at a settlement.

9. In the event of either party neglecting to appoint a surveyor within the time prescribed, or of the unwillingness of the umpire appointed to act, and no other umpire being agreed upon within a further period of ten days, either party shall apply to the President for the time being of the Royal Institute of British Architects, or the President of the Surveyors' Institution, who shall appoint an umpire forthwith, with all the powers as before described.

10. If either party shall be dissatisfied with the decision of the umpire, he may appeal to an Appeal Committee to be formed of nine persons, appointed annually—viz., three architects to be appointed by the Royal Institute of British Architects, three surveyors to be appointed by the Surveyors' Institution, and three barristers to be appointed by the Home Office. Three members, of whom one shall be an architect, one a surveyor, and one a barrister, shall form a quorum. The decision of this committee, save as hereafter mentioned, shall be final, and they shall have full discretion as to costs. Before giving a decision the members sitting on the case shall personally visit the premises of the plaintiff and defendant, and shall have power to decide whether, and if so to what extent, the proposed new buildings shall be amended, or the dominant premises altered.

11. In the event of either party refusing to accept the decision of the committee in all cases in which a larger sum than £500 is awarded either in money, damages, or works, or in which the interference with the proposed works exceeds £500 in value, he shall have power within one month from the publication of the said decision to bring the matter before the High Court of Justice by a summary process. The Court shall have the full powers set out in clause 8 aforesaid.

12. In any action to restrain building on the ground of its interference with the rights of light, and whether an interim injunction has been obtained or not, either party may apply to the Judge by summons, either to hear the same with an assessor or assessors, or to refer the same to arbitration in accordance with clauses 8 and 10. If at the hearing of such application or motion for injunction it appears to the Judge that the claim may be satisfied by damages, he may himself refer the case to such arbitration, and if he considers that the action for an injunction has been commenced unreasonably or unnecessarily, may order the party bringing such action to pay the defendant's expenses and costs on such scale as he may deem fit.

And the Joint Committee further recommend that they be empowered to expend the necessary funds in drafting a Public Bill to carry out the above provisions.

The Joint Committee also beg leave to submit to the Councils of the Royal Institute of British Architects and the Surveyors' Institution, for

their consideration, copies of correspondence that has taken place between the Committee and the Council of the Incorporated Law Society.

(Signed)

T. ROGER SMITH, Chairman
E. W. A. GRIMING
J. DOUGLASS MATTHEWS
J. FLITCHER MOULTON, Q.C., Joint
HERBERT THOS. SILWARD Committee.
ALEX. R. STENNING
HOWARD CHATFIELD CLARKE
GEORGE M. FREEMAN, Q.C.

W. J. LOCKE, Secretary.

December, 1900.

The following is the correspondence referred to in the concluding paragraph of the Report:—

"October 30, 1900.

"The Secretary, Incorporated Law Society.

"DEAR SIR,—With reference to the resolution carried at the Annual Provincial Meeting of the Incorporated Law Society recently held at Weymouth, which it is reported in the newspapers ran as follows: 'That the Council take steps with a view to getting the Law (of Ancient Lights) considered by the Legislature, and if they thought fit to co-operate with the Royal Institute of British Architects and the Surveyors' Institution,' I have the honour to inform you that a Joint Committee of the Royal Institute of British Architects and the Surveyors' Institution, which includes two Queen's Counsel, hon. members respectively of the Royal Institute and the Surveyors' Institution, is at present sitting, with a mandate from these two bodies to take such steps as may be necessary to secure an amendment of the Law of Ancient Lights.

"Should such a procedure be acceptable to the Council of the Incorporated Law Society, the Joint Committee would be very happy, before taking any public action, to communicate to them the result of their deliberations, with a view to co-operating with the Incorporated Law Society in promoting a Bill in Parliament to secure an amendment of the existing law.

"I should be glad to lay the reply of your Council before the Joint Committee at an early date.—I am, dear Sir, yours faithfully,

"T. ROGER SMITH,

"Chairman of the Joint Committee."

"Law Institution, Chancery-lane, W.C.

"November 10, 1900.

"T. Roger Smith, Esq., F.R.I.B.A.

"DEAR SIR,—I am directed by the Council of the Incorporated Law Society to thank you for your letter of October 30, and to say that the Council will be obliged if you will let them see the draft of the proposed Bill when framed, and that they will give it their careful consideration.—I am, dear Sir, yours faithfully.

"E. W. WILLIAMSON,

"Secretary Incorporated Law Society."

CHIPS.

The work of constructing the Axminster and Lyme Regis Light Railway is being pushed on with all speed.

The Wigan Town Council has appointed a committee to investigate the relations of members of the council with the corporation in the matter of contracts.

In the case of the application for discharge from bankruptcy on behalf of Alfred Charles Bedworth, late Handsworth, Staffordshire, builder, the order of discharge has been suspended for two years, ending Nov. 15, 1902. In that of Thomas Charteris (described in the Receiving Order and trading as Thomas Charteris and Co.), King William-street, E.C., timber dryer, the discharge has also been suspended for two years, ending Dec. 12, 1902.

In the presence of the Mayor and Corporation of Reading, a memorial of the late Mr. Charles T. Murdoch, of Buckhurst, Wokingham, who represented Reading for many years up to the time of his decease, was recently unveiled in the Art Gallery, at the Municipal Buildings in that town. The memorial consists of a marble bust of Mr. Murdoch, surmounting a pedestal of Italian veined marble, of green and red colour. It has been executed by Mr. George Simonds.

Last week the new public clock which has been placed in the tower of Featherstone parish church was set going. The clock is erected in memory of the late Rev. T. Hinde and his son, the late Rev. B. Hinde, who were vicars of the parish. The cost has been £100. Messrs. Potts and Sons, Leeds, were the contractors.

OBITUARY.

THE death of Mr. JAMES HADDON BOWEN, granite merchant, of Pitmurchie, took place at his residence, 17, Bon Accord-crescent, Aberdeen, on the 14th inst. Mr. Bowen, who was a native of Forfarshire, but who spent most of his life in Aberdeen, was 70 years of age. As the leading partner of the firm of Messrs. Bower and Florence, granite merchants and quarry owners, Spital Granite Works, King's-crescent, Aberdeen, his knowledge of the granite industry in all its branches was extensive. Some time ago he retired from active participation in the affairs of the firm, his place being taken by his eldest son, Mr. Haddon Anderson Bower, who had been for some time associated with his father in the business. Mr. Bower removed to Aberdeen in the days of the North-Eastern Railway Co., and was for several years connected with the administration of that company's work in the city as manager of the goods department. When he retired from that position, owing to the pressure of his own business, he was appointed a director in a number of companies, and at the time of his death was associated with many of the most prosperous business concerns in the city and district, of three of which he was chairman. Several years ago Mr. Bower, who was a keen agriculturist, acquired the fine residential estate of Pitmurchie, near Torphins. Mr. Bower is survived by his widow and by four sons and two daughters.

ARNOLD BOECKIN, the well-known Swiss artist, died on Wednesday at Fiesole. He was born at Bale in 1827, and studied at Dusseldorf. After spending some time at Paris and Rome, he established himself at Munich, whence in 1860 he removed to Weimar, in order to become Professor of Landscape Painting at the newly-founded School of Art in that city. He was chiefly noted in his earlier period for his landscapes; but it was as a painter of mythological and symbolic pictures that he became one of the most renowned artists of the Modern German School. His principal pictures are in the public galleries of Berlin, Munich, Bale, and Berne.

CHIPS.

The parks committee of the Sunderland Corporation have recommended the council to purchase about 30 acres of land at Low Barnes for a park, at a cost of £15,000.

A special committee appointed for the purpose has decided to recommend the Leicester Corporation to buy out the existing horse trams, instal an overhead electric system, and extend the mileage from eight to twenty-two miles. The cost of the scheme will be over half a million sterling.

At the Town-hall, Bootle, last week, Colonel A. G. Darnford, R.E., held a Local Government Board inquiry into an application made by the town council for sanction to borrow £29,200 for fire station purposes, £4,300 for the provision of public baths and a gymnasium, £3,645 for police station purposes, £2,300 for the provision of a library and reading-room, £2,020 for the purposes of a public assembly room, and £1,764 for the purposes of street improvement.

Canon Davidson, rector of Pembroke, in the city of Hamilton, Bermuda, West Indies, is enlarging his church by the addition of a south transept, and has commissioned Messrs. Wailes and Strang, artists, of Newcastle, to prepare designs and execute two new stained-glass windows of two openings each. The eastern window will represent the Annunciation to the Virgin and the Birth of Christ. The western window will represent the Resurrection of our Lord and the Ascension from Mount Olivet.

A the Town Hall, Holborn, on Monday, Feb. 18, Lord James of Hereford will unveil the memorial portrait of the late Sir James Hall, M.P., Recorder of London, which has been painted by the Hon. John Collier for the subscribers.

A new church of St. John is about to be built at Heywood from plans by Mr. Oakley. The building will consist for the present of nave, with one aisle and chancel, will seat 300 persons, and is estimated to cost £3,500.

On Saturday a new Independent Methodist Free Chapel in Ellison-road, Dunston, was formally opened. The structure, which is of stone, has been built at a cost of about £2,000, and will provide accommodation for 400 persons.

The Great Western Railway Company have just opened their long-contemplated branch line from Woodborough to Westbury, by means of which a saving of over half an hour can be effected in the journey between Paddington and Taunton and other towns in the West of England.

Building Intelligence.

ENNISKILLEN.—The opening of the new town-hall by the Countess of Erne took place on the 6th inst. The building is situated on the Diamond, an elevated portion of the island on which the town is principally built, and the cost of its erection amounted to £11,000. It was illustrated by a perspective and plans in our issue of Dec. 17, 1897, and is Free Renaissance in style, and the area which it covers is 9,070sq.ft. Limestone from the local quarries has been used for the walls, together with brickwork, and the exterior is faced with punched stone, from the Carrickreagh quarries. Dungannon chiselled sandstone has been employed in the mouldings, pilasters, columns, and cornices. The main entrance from Townhall-street is flanked by pilasters and columns, supporting a balcony, which is reached from the corridor on the first-floor level, and surmounting the building is a tower with four angle turrets terminating in a dome with finials. On the basement floor there are caretaker's apartments, kitchen, storeroom, and fire-engine room. The main entrance is flanked by the town clerk's office and the chairman's parlour on one side, and by a reading-room and a bookstore on the other. A minor hall, 35ft. by 31ft., faces Water-street. Over the suite of municipal offices is the assembly-hall, which has a floor area of 2,925ft., and is 29ft. high. Messrs. Anthony Scott and Sons, of Drogheda, Navan, and London, were the architects, their plans having been selected in open competition, and placed first by the assessor, Sir Thomas Drew. The general contractor was Mr. James Harvey, Enniskillen. Messrs. Musgrave and Co., Belfast, supplied the heating apparatus.

GARFORTH.—At the Manor Farm, Garforth, where, under the auspices of the county councils of the West and East Ridings, educational work is being carried on as a department of the Yorkshire College, the new buildings are now almost ready for occupation. These are to be devoted to practical instruction in agriculture and kindred industries. There are two sections. One comprises the dairy, including rooms for separating, churning, making-up, packing and delivery, and cold storage. The other has on the ground floor a lecture-room, the board and professor's room, male students' sitting-room, &c.; and on the first floor a laboratory, a classroom, a bacteriological-room, a female students' sitting-room, &c. In the basement are the heating apparatus and the boilers. The buildings, which cover an area of about 100ft. by 30ft., are lighted by electricity. Considerable alterations have also been made in the farm premises. The new buildings have been erected from designs by Messrs. Smith and Tweedale, architects, South-parade, Leeds.

GLASGOW EXHIBITION.—The Russian section buildings in course of erection in the grounds of the exhibition are to comprise four elegant pavilions representative of agriculture, forestry, minerals, and the products of the Imperial appurtenances, the latter being akin to the British Crown lands. In the centre of the group a reception-hall, rising to a height of 104ft., will be erected for the reception of distinguished Russian guests. The plans of the buildings were prepared by M. Schechtel, architect, Moscow, and the work is being carried out by a staff of over one hundred carpenters specially sent from St. Petersburg, under the supervision of the assistant architect, M. Zalenko. The Russian Government has voted £30,000 in order to secure adequate representation at the exhibition, and at the Muscovite section an opportunity will be afforded to visitors of seeing Russians working at their own industries. In addition to the space in the grounds allotted to Russia, extending to 29,705sq.ft., a space of 11,131sq.ft. has been reserved inside the main building. In the Russian colony to be thus constituted, peasants, artisans, and others will be constantly at work.

KEIGHLEY.—The new block of municipal offices in Bow street, Keighley, formally opened by the mayor on Tuesday last, will supersede the old premises in Coney-lane, which have long been inadequate for the transaction of the municipal business. On the ground floor are the borough treasurer's office and rooms, rooms for the town clerk, and the sanitary and medical officers. The mayor's rooms are on the first floor, committee-rooms, and the borough surveyor's offices. The northern end of the second floor is occupied with the square-shaped council-chamber, having a

public gallery; and a serving and dining-room, robing-room, &c. A kitchen is one of the features of the top floor. Electric lighting (at present from a private source) is applied throughout. Mr. John Haggas has prepared the external and Messrs. J. B. Bailey and Son the internal plans, and the entire undertaking represents an outlay of £10,000.

SOUTHAMPTON.—For some time the Central District Board School in St. Mary's-road has been closed while the building has been enlarged on a considerable scale, the roof being lifted while another story was added. The infants' school was first erected from the design of the late Mr. E. T. Howell in 1879 and 1880 on a portion of the site. In 1887 and 1888 the boys' and girls' school was also built from plans by the late Mr. Howell as a two-story building. The accommodation was for 299 boys and 299 girls, costing a total of £5,192. Under the supervision of Mr. John H. Blizard, architect, of Southampton, it was recently decided to raise the original boys' and girls' school building another story, making a three-story building of it, and to add to the infants' building two stories, also making it a three-story building, and connecting the two schools into one large block. This has been carried out. The infants' department now occupies the ground floor, consisting of a large schoolroom 69ft. by 22ft., and three classrooms; also another schoolroom, 64ft. by 25ft., which is still retained with two classrooms, and an additional classroom for girls. The girls' school is on the first floor, a portion being the existing girls' department, containing a large schoolroom, 69ft. by 22ft., and connected with same are three classrooms, the other portion being a new story, consisting of a large classroom, 31ft. 6in. by 25ft., and two smaller classrooms. The boys' department is placed on the uppermost floor, and the general arrangement of the rooms are similar to that of the girls', one large schoolroom, 69ft. by 22ft., and seven classrooms all communicating with a long fireproof corridor. The accommodation of the enlarged school is: Boys 507, girls 467, and infants 683, a total of 1,657. The contract was carried out by Messrs. H. Stevens and Co., at a total of £11,352. The general elevation and character of the buildings are similar to the ones originally designed. The Portland and Bath stone dressings and other work removed for the extension were reused, with additional stonework and coloured brick bands and arches to match the existing work. With regard to the roofs, they were not taken to pieces and afterwards reconstructed, but were raised bodily by means of a number of screw-jacks, working simultaneously. The three roofs, which formed the front portion of the buildings, covered a superficial area of 3,900ft., were raised intact about 9in. at a time, and the roofs securely blocked up on the walls before taking another lift, the total height raised being 15ft. The easternmost roofs in two portions, which covered a superficial area of 2,300ft., were likewise raised intact by the same means, the total height these roofs were raised being 29ft. The old walls forming the main buildings were strengthened by inside brick piers, built in cement, carried up from the foundations.

On Saturday, the Primitive Methodists at Backworth, Tyneside, opened a new church. The building, which is of brick, with stone facings, was designed by Mr. J. R. Nicholson, the assistant engineer at Backworth Maud Pit, and the contractors were Messrs. Bolam and Davison, of Birtley. The chapel has cost £1,350.

The Colne Town Council have decided to apply to the Local Government Board for sanction to borrow £4,875 for the purchase of over 10,000 yards of vacant land, with some buildings adjoining, in Swan Croft, near the centre of the town. Fairs and markets have been held here from ancient times, but when the purchase is completed all markets and fairs will be held on the corporation market.

A special meeting of the Eastbourne Town Council and of the executive committee appointed to arrange for the erection at Eastbourne of a memorial statue of the late Duke of Devonshire, the founder of the town, was held on Monday for the purpose of selecting a site. Eventually it was determined that the statue should be erected at the seaward end of Devonshire-place, facing the roadway and the parades, a commanding situation. Mr. Goscombe John, A.R.A., the sculptor, remarked that the statue in bronze would be exhibited at the Academy this year, and that it would be possible to arrange for its unveiling at Eastbourne during September. The cast will be on exhibition in Paris.

COMPETITIONS.

BIRMINGHAM.—A special and private meeting of the town council was held on Wednesday week for the purpose of awarding the prizes of 35gs. and 15gs. for the first and second best plans for a scheme of the extension of the Prince's Parade. At the last meeting of the council held on the 18th ult., the property committee recommended that the first prize should be awarded to the plans marked "Experience," and the second to the plans marked "Civil Engineer." At that meeting, after considerable discussion, it was decided not to adopt the committee's recommendation, but leave the matter over for discussion at a special meeting of the council, which was accordingly now held. A long discussion took place, the merits and demerits of each set of plans sent in by the several competitors being carefully considered. The result was that the committee's recommendation was confirmed, the first prize of 35gs. being awarded to "Experience," Messrs. Mangnall and Littlewood, of Manchester; and the second prize of 15gs. to "Civil Engineer," Mr. Stow, of Chertsey, formerly surveyor to the Bridlington Urban District Council. The other competitors were "Engineer," Messrs. Wood and Frenching, London; "Eastward Ho," Messrs. Beal and Shepherdson; "Neptune," Mr. S. Dyer, Bridlington; "Yorkshire Lad," Messrs. Shepherdson and Beal; and "Progress," Mr. Matthews, the borough surveyor. The plans selected provide for an iron pier and promenade with a pavilion to accommodate 3,000 persons, the estimated cost being about £28,000.

GLASGOW TECHNICAL COLLEGE.—A meeting of the Governors of the Glasgow and West of Scotland Technical College was held on Tuesday, Mr. W. R. Copland, presiding. The chairman presented the instructions proposed to be sent out to architects submitting designs for the new buildings of the college. In these instructions it was stated that competing architects were not required to comply literally with the conditions contained in the schedule, which were to be looked upon rather as suggestions, to be carried out if it was possible to do so, at an expense not exceeding £120,000. It had been definitely decided to utilise the central site in George-street. It was not an ideal site, but it was near the Municipal Buildings. The instructions to the architects were then approved. The secretary, Mr. H. F. Stockdale, intimated that the subscriptions to the building fund now amounted to £67,688.

GLASGOW ROYAL INFIRMARY RECONSTRUCTION.—A meeting of the executive committee of the Glasgow Royal Infirmary reconstruction scheme was held on Friday. A report by Mr. James Miller, 223, West George-street, the architect whose plans have been adopted, was submitted. He advised that a considerable portion of the permanent buildings should be erected and made ready for occupation before any part of the present structure is demolished, and that the reconstruction should be proceeded with in such a manner that the accommodation of the institution will at no time be less than at present. It was also desirable to avoid as much as possible the necessity for temporary buildings, which would involve a needless outlay of from £7,000 to £8,000. He proposed to erect the north wing or surgical block in the space between the present north block and St. Mungo's College. This block, which was practically a complete infirmary in itself, was 290ft. long, and contained thirteen large wards and twelve small wards, with 224 beds. It would take two years to build. When it was ready to receive patients, those in the present south block would be transferred to it, and the present south block would be demolished, and the building of the Jubilee block could be proceeded with. He suggested that contracts for the Jubilee block should be got out twelve months previous to the completion of the north block, in order to hasten its erection. With the hewn work and materials prepared, he saw no reason why it should not be ready for the roof eight months from the time it was commenced. The Jubilee block will contain 239 beds. On the completion of the Jubilee block, the next portion of the building to be erected would be the central block, which runs north and south, and forms the connecting link between the north and Jubilee blocks. The recommendations were adopted, and a new sub-committee was appointed to confer with the architect and arrange for the reconstruction.

LEEDS BRANCH LIBRARIES.—Eleven competitive architectural designs for the branch public library in Nineveh-road, Holbeck, have been sent in to

the offices of the town clerk of Leeds. They have been forwarded to Mr. Leonard Stokes, the assessor, who will make an adjudication. The competition is confined to architects practising in Leeds. With reference to the branch library and police-station in Dewsbury-road, it was reported at the meeting of the sub-committee on Monday that the assessor had suggested in the case of the three selected designs the making of certain alterations, and these having been carried out, the committee will make a final choice.

SYDNEY.—The first prize of £1,000 offered to the engineers of the world for the best design for a bridge to connect Sydney with the North Shore has been awarded to Mr. E. Cruttwell, engineer, of Queen Anne's-gate, Westminster. The tender sent in with the plans by Sir William Arrol was for the amount of £2,927,236. Mr. Cruttwell, whose design is for a cantilever bridge 2,502ft. in total length, and having three main spans, the largest of 1,216ft., was resident engineer at the Tower Bridge throughout its construction, while recently he has been engaged in conjunction with Mr. A. Murray, F.R.I.B.A. (the City surveyor) in preparing the designs for the widening of London Bridge shortly to be submitted to Parliament. The second prize of £500 has been gained by Mr. Norman Selfe, of Sydney, whose tender (the offer of a German firm) was for £1,280,000. There were 24 designs sent in from all parts of the world, the lowest tender being for £991,870, none of which have been recommended for adoption by the board of examiners.

The claim of the trustees of Captain Pym in respect of the low-lying land at Mount Gold authorised to be acquired by the Plymouth Corporation Act, 1898, has been settled in the sum of £4,250. The area of the land is 7 acres 2 roods 8 poles.

At the last meeting of the rural district council for South Stoneham a letter was read from Messrs. Lemon and Blizard, architects, of Southampton, stating that the National Land Company were about to lay out land on the Bitterne Manor House Estate for building purposes. There would be 280 plots, which would give 560 houses, of a rateable value of £5,960, and a total population of about 2,800.

The Exmouth Urban District Council having applied to the Local Government Board for permission to borrow £2,230 for works of sewerage in the town, Mr. W. Meade King held an inquiry on Friday. Mr. H. C. Adams (the clerk) said the money was required for the making of a main sewer in Exeter-road and another at Littleham to join the outfall sewer. There was no sewer at present at Littleham, but as houses were being built there and the railway to Salterton would have a station at Littleham, and building operations would follow, a sewer was necessary.

A stained-glass window, erected to the memory of the late Principal Caird in the Bate Hall of Glasgow University, was unveiled on Friday. The window was designed by Mr. D. D. D. Morris and Co., Surrey. There are four lights, the upper and the lower portions being separated by the gallery of the hall. In the upper part there are figures of four philosophers and four theologians whose works the late Principal delighted to interpret, and in the lower part are allegorical figures of the four faculties—Arts, Medicine, Law, and Divinity; while in the tracery of the window is a small figure symbolical of the Creation of Light. The prevailing colours of the ground-work, which has been kept relatively light and is foliated in design, are white, pale green, and blue. Upon this ground the figures appear in varied colours.

In consequence of the rapid increase in the population of that portion of Lwisham bordering on the borough of Camberwell by Nunhead, it has been decided to erect a parish church for Waverley Park, to be known as St. Silas. The church will be erected on the now vacant triangle at the end of Ivydale-road. There is nearly £4,000 in hand towards the building fund.

A Local Government inquiry was held at Halifax on Friday respecting an application by the town council for a provisional order authorising them to purchase the gas mains, &c., owned by the Sowerby Bridge District Council and the Elland Gas Company, in Skircoat and Warley, two districts recently added to the borough. Agreements had been entered into with these authorities under which the properties were proposed to be transferred for £9,181 and £1,100 respectively. The corporation further asked for sanction to borrow £9,500 for extensions of mains in the new areas, £2,500 for meters and service pipes, and £719 for contingencies.

Engineering Notes.

DOVER.—The laying of the first block, weighing 40 tons, of the eastern arm of the National Harbour at Dover, took place on Thursday in last week, the great mass being put into position by means of a diving-bell. The new seawall from the East Cliff Jetty to the shore end of the eastern arm, a distance of 3,850ft., is now completed. The pier just commenced will be 3,320ft. in length, entirely constructed of 40-ton concrete blocks. As a preliminary to the work, a temporary pier has been run out from Langdon Gap, where the east pier commences—and this is now 700ft. long. On it are three Goliath cranes and a travelling derrick. Excellent progress is being made on all sections of the National Harbour works. The fourth year of the contract has now been entered upon.

CHIPS.

The Board of Trade have appointed Sir Frederick Bramwell, Bart., F.R.S., as the referee to determine the value of the tramway undertaking of a local company, which is to be purchased by the Wallasey Urban District Council under section 43 of the Tramways Act, 1870.

A new infirmary, adjoining the Skipton Union Workhouse, was formally opened on Saturday. Mr. Hartley is the architect. The cost per bed has been £90, the total outlay being about £4,300.

Councillor Charles Cobham, architect, of Gravesend, has made the suggestion in the local Press that the town council of Gravesend and the urban district council of Northfleet should join hands and purchase Rosherville Gardens, now in the market, and provide on these 17 acres of land an electric-light station, technical school, a public hall, baths, and gymnasium, for the joint benefit of these rapidly-developing districts.

In the case of Alfred Henry Beal, late Regent-street, W., now Conduit-street, W., land and estate agent, the order of discharge has been suspended for two years, ending Dec. 12, 1902. In that of James William Fuller, Effra-road, South Park, Wimbledon, S.W., slating and tiling contractor, the discharge has been suspended for three years, ending Dec. 7, 1903, and in that of Edward George Kendal, The Grange, Gunnersbury, W., builder, the discharge has been suspended for four years, ending Dec. 7, 1904.

The Liverpool City Council having applied to the Local Government Board for sanction to borrow £6,500 for the laying out as an open space of St. James's Churchyard, Toxteth, Colonel A. J. Hepper, D.S.O., R.E., the inspector appointed, held the inquiry at the municipal buildings in that city on Monday. The city engineer, Mr. J. A. Brodie, explained the plans.

The Priory Park Board Schools, St. Albans, are being warmed and ventilated by means of Shorland's patent Manchester grates, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

The Medway Board of Guardians have adopted with the approval of the Local Government Board, plans by Mr. G. E. Bond, M.S.A., Rochester, for the erection of children's cottage homes and schools, at an estimated cost of £19,500.

At Truro Bankruptcy-court on Saturday, the Official Receiver complained that William Francis James, builder, of Newquay, had failed to disclose his estate, and the examination was adjourned.

The Commissioners of Lunacy have had before them the plans of Mr. Hippolyte J. Blanc, of Edinburgh, for the new lunatic asylum for that city to be built at Bangour.

Mr. M. K. North, M.Inst.C.E., Local Government Board Inspector, held an inquiry at the National Schoolroom, Harbledown, on Wednesday week with reference to an application by the Bridge Rural District Council for sanction to borrow £5,000 for the purposes of sewerage and sewage disposal for the parishes of Harbledown and St. Nicholas Hospital. Mr. Bromley, consulting engineer, explained the scheme.

A new Board school, erected by the School Board for London, in Invicta-road, Westcombe Park, was opened on Tuesday evening by the Hon. Lyulph Stanley, vice-chairman of the Board.

The urban district council of the enlarged area of Newton Abbot and Highweek has accepted, with thanks, the offer of Mr. J. Passmore Edwards to build a free library in the town as a memorial of his mother, who was born at Newton Abbot. Mr. Passmore Edwards proposes that the buildings shall be similar in size and shall cost about as much as the library he has provided in Truro or St. Ives, Liskeard or Launceston.

NOTICE.

The Editorial, Advertisement, and Publishing Offices of the BUILDING NEWS and ENGINEERING JOURNAL are at—

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TO CORRESPONDENTS.

[We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.]

It is particularly requested that all drawings and all communications respecting illustrations or literary matter should be addressed to the EDITOR of the BUILDING NEWS, Clement's House, Clement's Inn Passage, Strand, W.C., and not to members of the staff by name. Delay is not unfrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

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NOTICE.

Bound copies of Vol. LXXXVIII. are now ready, and should be ordered early (price 12s. each, by post 12s. 10d.), as only a limited number are done up. A few bound volumes of Vols. XXXIX., XL., XLVI., XLIX., LI., LIII., LX., LXIII., LXV., LXVI., LXVII., LXVIII., LXIX., LXXI., LXXII., LXXIII., LXXIV., LXXV., LXXVI., and LXXVII. may still be obtained at the same price; all the other bound volumes are out of print. Most of the back numbers of former volumes are, however, to be had singly. Subscribers requiring any back numbers to complete volume just ended should order at once, as many of them soon run out of print.

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Advertisements for the current week must reach the office not later than 3 p.m. on Thursday. Front-page Advertisements and alterations in serial advertisements must reach the office by Tuesday morning to secure insertion.

SITUATIONS.

The charge for advertisements for "Situations Vacant" or "Situations Wanted" is ONE SHILLING FOR TWENTY-FOUR WORDS, and Sixpence for every eight words after. All Situation Advertisements must be prepaid.

REMOVED.—E. K. and Co.—C. W. and Son.—Binks.—N. J.—N. F. W.

X.—The Rowton Houses comprise four groups of model lodgings, situate at Hammersmith, King's Cross, Newington Butts, and Vauxhall respectively; the architect is Mr. Harry B. Measures. The Hammersmith block was illustrated in our issue for Dec. 1, 1899; and that at Newington Butts in our numbers of Oct. 15 and 22, 1897.

"BUILDING NEWS" DESIGNING CLUB.

DRAWINGS RECEIVED.—"Meta" (too late).

Correspondence.

NEW R.I.B.A. COMPETITION RULES.

To the Editor of the BUILDING NEWS.

SIR,—What is the use of pounding away, tinkering up rules and regulations issued by the Conduit-street authorities for the guidance of committees in competitions, when architects

are so short-sighted as to readily throw their principles of practice to the winds on every occasion? Your own columns in this week's issue, in which "Fidus Achates" beats the air, in spite of his very admirable remarks on the conduct of competitions, furnish your readers with an instance in point—viz., the Swansea Harbour Offices Competition, in connection with which nearly one hundred architects have been found willing to admit that the modest sum of 5 per cent. on £12,000 is enough to include travelling expenses and attendances at an untold number of meetings of committees. It needs but little knowledge of such affairs to realise how many times an architect is liable, under these unfair terms, to be summoned to attend, whether he is really wanted or not, seeing that the employers are put to no expense or trouble. I declined to compete for this very reason. A journey to Swansea from London, and probably two nights' expenses at an hotel every time one had to wait on the committee, besides the ordinary visits for supervision, did not appear to me to be good enough for a working architect who wishes to pay his way. It is contrary to the recognised rules of professional practice and the scale of charges to which members of the R.I.B.A. are pledged. None the less, the President has consented to nominate an ex-Vice-President to adjudicate, and almost an army of members crowd forward to fight for the prize. Preach away, Professors! Feather your own nests, as you rule the roost, crowing with cocksure harmony about pluming the official rules of competitions and practice; but it will require all the wisdom of Solomon to insure therefrom any practical improvement while architects, as a body, have no more sense of their professional-union obligations one to the other as set forth by the R.I.B.A. Unless members who have pledged their troth on election stick to their undertakings with loyal consistency, they become worse than outsiders, and ought to be treated as such wherever they are found. The Swansea authorities did not, of course, mind a brass farthing that I and a few others held out. Why should they, with 97 designs before them? Before Messrs. Lewis Solomon and Atkin Berry's select committee, appointed last Monday week to inquire into the unhappy status of the profession, as announced in the BUILDING NEWS last Friday, is relegated to obscurity at No. 9, Conduit-street, let the members realise that the remedy of the evil must emanate from the profession itself. Combination alone will convince the public, and without combination and unity of purpose you may tinker away till the crack o' doom.—I am, &c.,

A WELL-KNOWN ARCHITECT.

A CORRECTION AND AN OMISSION.

SIR,—In a recently-published work upon "Abbeys around London," by Mr. John A. Riddolph, under "St. Alban's," we read (p. 65) the following curious information:—"The huge and recently restored reredos is a magnificent example of its kind. Its restoration was done under the supervision of Sir G. Scott." As a matter of fact, the renovation of this high altar screen was commenced in A.D. 1883, many years after Sir Gilbert's death. It was carried out solely at the expense of the present Lord Aldenham (then Mr. Henry Hicks Gibbs), and under the immediate direction of the late Sir Arthur W. Blomfield, A.R.A., by my sons and myself. Sad to relate, our task—a long and delicate one—was completed the very evening Sir Arthur—to the great grief of all who knew him (diligently at work until the very last)—passed painlessly away. That was on the 30th of October, 1899.

A remarkable incident in connection with the incoming of the new century occurred at Exeter Cathedral. The hours are struck upon the great bell known as "Peter"—the great bell given by Bishop Peter Courtenay (A.D. 1478-85). It is said to weigh 6 tons 5cwt., and is hung in the most northern of the two Norman towers built by William Warelwast, third Bishop of Exeter (1107-36), who himself was the blind nephew of King William the Conqueror. The clock itself, fixed below in the north wall in the same tower, is reputed to be one of the oldest in England, having been placed there in the reign of King Edward III. (A.D. 1327-77). The clock had been in full working and striking order all day upon Dec. 31; but when the moment of midnight 1900-1 arrived and was sounded forth from half a score of other towers, "Peter" was

dumb. Indeed, not a sound was heard until the century was exactly an hour old; then, apparently recovering from its emotion, the old clock struck one.—I am, &c.,

Jan. 11 1901 H. H. H.

CHIPS.

The new tobacco warehouse at the Starkey Docks, Liverpool, now in course of erection for the Mersey Harbour Board, will be the largest in the world, having a capacity for not less than 1,000,000 hogsheads of tobacco in its cellars, and twelve stories above. Its length is 725ft., width 100ft., and height 180ft.

The Walter Crane collection of nearly a thousand works of art—including oil-paintings, water-colours, sculptures, metal-work, embroideries, bookbindings, and drawings, with a few exceptions all his own production, and the work of the last fifteen years—has been opened in Vienna, after achieving a great success in Buda-Pesth. The exhibition fills four rooms of the Austrian Museum of Art and Industry.

The members of the Crompton Co-operative Society, Shaw, Lancashire, wishing to commemorate the opening of the above, which occurred fifty years ago, decided to erect a clock and bell tower, and have a new eight-day clock showing the time upon four external dials, 6ft. each in diameter, and striking the hours on a large bell. The above has now been carried out by Messrs. Wm. Potts and Sons, clock manufacturers, of Guildford-street, Leeds, the firm selected by the manager, committee, and members to carry out the same. Messrs. Potts and Sons, Leeds, are also erecting new large clock for the Grimsby Ice Co., Grimsby, Lincolnshire, and church clocks at Dingley, Northants, and Wykeham, Yorks, for Lord Downe, and a Cambridge quarter-chime clock near Leeds.

The town council of Longton, Staffs., visited the gasworks on Wednesday week to inspect the water-gas plant recently laid down under the direction of the gas manager, Mr. W. Langford. The generating plant has been supplied and erected by Messrs. Humphreys and Glasgow.

Mr. Wyndham Hughes has just finished the second of a series of frescoes in Christ Church, Wolverhampton. The latest represents "The Adoration of the Magi," and it has been consecrated by Archdeacon Hodgson, of Stafford.

A memorial to the late Lord Chief Justice Russell is to be placed in Epom Cemetery, and will take the form of a dressed granite inclosure wall, to inclose a space of 27ft. by 20ft., rising to an average height of about 6ft. Large pillars, each weighing about a ton, will be placed at the corners, centre, and sides of the gateway. The panels between the pillars are built up of four courses of stone work, and form a series of small arches set on a tapered base course. The work will be Irish in character, and is being carried out by Messrs. H. Campbell and Sons, at Newry Granite Works, near to Killowen, his native place, from which Lord Russell took his title.

The Dean of Worcester (Dr. Forrest) dedicated a new font in the Church of All Saints, Worcester, on Sunday, completing the work of restoration which was commenced many years ago by the vicar (the Rev. B. Arthure) and the late Bishop Pailpott, who was a munificent donor to the funds.

The Swansea Harbour Trustees have deposited a Bill, in which they seek powers to construct a new dock and to enlarge and extend the half-tide basin of the south dock, and to construct railways and other works, at an estimated cost of £2,000,000.

An exhibition of water-colour drawings and studies by the late Mr. Ruskin will be held during the month of February at the Gallery of the Old Water-colour Society, 5A, Pall Mall East, S.W.

Coatbridge Town Council have resolved to proceed with the erection of a model lodging-house according to plans prepared by Mr. T. Smith on a site in Buchanan-street, at a cost of £11,500, accommodation being provided for 336 beds.

At the West Suffolk Quarter Sessions last week, William Benjamin Buxton, 33, surveyor, of Clare, was charged with making false entries in a wages book and cash book, with intent to defraud the Bumpstead Rural District Council at Kedington. He was convicted and sentenced to six months' hard labour.

At the Auction Mart, Tokenhouse-yard, last week, the total amount realised was £34,006, but of this £18,652 was contributed as the result of a sale of gas stock.

The urban district council of Waterloo, near Liverpool, have resolved to pay the sum of 200 guineas to Mr. F. S. Yates, 100 guineas to Mr. G. Oliver, the engineer and clerk of the works respectively, and 30 guineas to Mr. J. I. Thompson, for services rendered by them during the construction of the Waterloo-with-Seaforth tramways.

about 7ft. beyond the building line of De Vere-gardens. Mr. J. W. Stephens, architect, gave evidence in support of the case, and produced plans of the proposed buildings. Mr. Wallace, for the London County Council, said he would not call evidence, as the facts and plans were not in dispute. By section 22 of the London Building Act, the superintending architect of the County Council was to have the sole decision as to the building line of any street; and he contended that the premises of the appellants were really in the Thorney-road, where the building line must be the line of the existing houses. The chairman said, as the point in question was important, they thought it desirable to consider their judgment.

Mr. J. Veit, assistant surveyor to the Barrow-in-Furness Corporation, has been appointed surveyor to the urban district council of Goole.

THE BUILDING NEWS DIRECTORY.

Below we publish a BUILDING NEWS DIRECTORY, to which Architects may easily refer when in search of the makers and vendors of Architectural and Building Specialities.

The large Advertiser is, of course, to a considerable extent independent of such help. By his judicious iteration of the merits of his specialities he effectually impresses the mind of the constant reader with his claims to attention. But he will find it to his interest to avail himself of this help to publicity; and, besides, there are hundreds of Manufacturers who never advertise in the ordinary way, or who, if they do so, only advertise one or a few of the articles they make or supply, and who yet

essentially need constantly to remind Architects of their existence.

It may be urged that the Trade Directories and Price Books to a certain degree supply this want; but when it is remembered how limited, comparatively, is their circulation, and how swamped the comparatively few that are wanted are for the most part amongst hundreds of thousands of other names and addresses in which Architects have no interest, and among which they are seldom likely to search for what they require, it will be seen at once how advantageous in a Journal like THE BUILDING NEWS will be the Weekly "Directory" we publish here.

It will be evident, of course, that many Manufacturers will desire to have more than one

entry in the list, because they supply more than one speciality. For the majority possibly one entry will be ample, and that we undertake to make and to repeat weekly in every edition for the sum of ONE POUND PER ANNUM, payable strictly in advance, and expiring on the 31st of December in each year.

Clients who may desire to have more than one entry under different heads can do so to any extent they please by payment of *One Pound each* for every additional entry.

All payments must be made in advance, as this feature is not introduced as a remunerative one to the Publisher in itself, and the small charge made will barely defray expenses, and will not allow of booking.

ACETYLENE GAS ENGINEERS—

SHARP & CO., 18, Great Portland-street, N.W. Showrooms 67, St. Paul's Church-yard, and 189, Piccadilly, W.

AIR-PUMP VENTILATORS—

BOYLE, R. BEAT, and SON, Ltd., 44, Holborn Viaduct, London, and 110, Rotherhithe-street, Glasgow.

ANCASTER STONE—

ANCASTER STONE, from the "Lundley" Quarries, Ancaster, near Doncaster.

ANCASTER STONE.—Thompson's Ancaster Quarries Co., Ltd., Office, 11, Elmer-street, Grantham.

ARCHITECTURAL CONCRETE—

FAMBRIN & DANIELS, Architectural Concrete Works, Lincoln.

ARCHITECTURAL METAL WORKERS—

BROWN, THOS. and CO., 64, Clement-street, Birmingham.

GANTHURP, T. J.,—Craftsman in Metals to H.M. the Queen, and A.C. Metc. Works to H.R.H. the Prince of Wales, 16, Long Acre, and 19, Castle-street East, London, W.

HARDMAN, FREDERICK, and CO., King Edward's Works, King Edward-street, Birmingham, and 29, Cockspur-street, Glasgow, London, S.W.

SHRIVELL, W., 1 and 2, Castle-st., Endell-st., London, W.C.

STRIDE and CO., 45, Canaburg-street, N.W. Showrooms, 67, St. Paul's Church-yard, and 189, Piccadilly.

WHITE and SON, late Gibbons and White, 207, Oxford-street, London, W.

WILKINSON, GEORGE, Warrar Works, Salford, Manchester, London, 22, Narre-street, Strand, Newcastle-on-Tyne, Bigg Market, Dublin, 36, George's Quay.

ARCHITECTURAL SCULPTORS—

DAYMOND, J., and SON, Stone, Brick, and Wood, 7, Edward-street, Farnham Bridge-road, S.W.

JONES, T. A. Wood and Stone, 1, Manville-street, Cardiff.

TATTON, WILLIAM W., 19, Colaba-road, Cardiff.

ASH—

HUDSON, B. J., and SONS, Dry English and American, 33, Whitfield-street, W., 224, Store-street, W.C., and 61, Endell-street, W.C.

ASPHALTE—

FALDO, THOMAS, Somerset Wharf, 243 and 245, Rotherhithe-street, London, S.E.

BATHS, PUBLIC—

BRADFORD, THOMAS, and CO., Crescent Ironworks, Salford, Manchester, and 140 to 143, High Holborn, London, W.C.

BIRCH—

HUDSON, B. J., and SONS, Dry and in all thicknesses, 33, Whitfield-street, W., 224, Store-street, W.C., and 61, Endell-street, W.C.

BOILERS—

LEE, T. and R. and CO., Engineers, Holloway, near Finsbury.

BOOKS—

BATSFORD, B. T. (Architectural), 94, High Holborn, London, W.C.

BRICKS—

WHITING, R. M. and H., Red Hand-made Facings, plain and moulded, see Builders' Catalogue, Farnham, Kent.

CASEMENTS AND WINDOWS—

ASHWELL and NEBBIT, Ltd., late W. W. Phipson, 12, Great James-street, W.C.

BURY and PUTT, 15 and 16, York-street, Westminster, S.W.

CHRYSTAL ENGINEERING and CASEMENT MANUFACTURING CO., Ltd., Smithfield Engineering Works, George-st., Chester.

CRITCHELL MANUFACTURING CO., Ltd., Manor Works, Braintree, Essex.

HOPE, HENRY, and SONS, Ltd., Works, Lionel-street, Birmingham, London, 30, Victoria-street, S.W., Glasgow, 21, Clare-street; Newcastle-on-Tyne, 65, Northumberland-street, Glasgow, 134, St. Vincent-street.

FRANKS, R. E. and CO., Ltd., 181, Upper Kennington-lane, London, S.E.

WHITE and SON, late Gibbons and White, 207, Oxford-street, London, W.

WILLIAMS BROS. and CO.,—Works: Kaleyards, Chester, London: 18, Hart-street, Bloomsbury, W.C., Leeds: 12, Park-lane, Glasgow: 30, Belford-street.

WILKINSON, GEORGE, Warrar Works, Salford, Manchester, London 22, Narre-street, Strand, Newcastle-on-Tyne, Bigg Market, Dublin, 36, George's Quay.

CEDAR—

HUDSON, B. J., and SONS, Dry English and American, 33, Whitfield-street, W., 224, Store-street, W.C., and 61, Endell-street, W.C.

CEMENT MANUFACTURERS—

ROBUST PORTLAND CEMENT CO., Remy.

DEVONSHIRE MARBLES—

BLACKLER, A. W., and SON, Royal Marble Works, St. Mary Church, Torquay.

DOORS, IRON—

CRITCHELL MANUFACTURING CO., Ltd., Manor Works, Braintree, Essex.

DRAIN PIPES—

MACFARLANE, W., and Co., Iron, Saracen Foundry, Glasgow.

ELECTRIC BELLS—

WRIGHT, ARCHIBALD J., (Islington) Electrical Works, 318, Upper-street, London, N.

ELECTRIC LIGHT APPLIANCES—

CHRYSTAL ELECTRICAL STORAGE SYNDICATE, Ltd., Clifton Junction, near Manchester.

LUNDEN, A. P., Pioneer Electric Works, Liverpool-road, London, N.

ELECTRIC LIGHT ENGINEERS—

ASHWELL and NEBBIT, Ltd., late W. W. Phipson, 12, Great James-street, W.C.

RASHLEIGH PHIPPS and CO., 102, Oxford-street, London, W.

STRIDE and CO., 45, Canaburg-street, N.W., showrooms, 67, St. Paul's Church-yard, and 189, Piccadilly, W.

ELECTRIC LIGHT FITTINGS MAKERS—

PERRY and CO., 17, Grafton-street, Bond-street, London, W.

FANLIGHT OPENERS—

HILL, JAMES, and CO., 101A, Queen Victoria-street, London, E.C.

FELT—

MCNEILL, F., and CO., Lamb's Buildings, Sunhill-row, E.C. See fortnightly list.

FIREPLACES—

SHORLAND, E. H., and BRO., Drake-street Works, Stretford-road, Manchester.

FIRE-RESISTING PARTITIONS—

SHEPWOOD and CO., Lindsafarne, Walton-on-Thames.

GASFITTERS—

BEAVER and SONS, 35 and 36, Westgate-street, Gloucester; London Office and Showrooms: 27, Victoria-street, Westminster, S.W.

STRIDE and CO., 45, Canaburg-street, N.W.; showrooms, 67, St. Paul's Church-yard, and 189, Piccadilly, W.

GLASS EMBOSSED AND STAINING—

BAXENDALE and CO., Miller-street, Manchester; also at Edinburgh and Liverpool.

GLASS ROOFING—

HOPE, HENRY, and SONS, Ltd., Works, Lionel-street, Birmingham, London, 30, Victoria-street, S.W., Glasgow, 21, Clare-street; Newcastle-on-Tyne, 65, Northumberland-street, Glasgow, 134, St. Vincent-street.

GLAZED BRICKS—

ADREN, H. R., Glazed Brick Works, Halfway, Glouster, and SONS, London Road, 101, Baltic Wharf, Waterloo Bridge, S.E., and 101, Baltic Wharf, Waterloo Bridge, S.E., and 101, Baltic Wharf, Waterloo Bridge, S.E.

GLAZING (PATENT)—

DEARDS, SAM., F.R.H.S., Victoria Works, Harlow.

GRANITE MERCHANTS—

BOWER and FLORENCE, the Safford Granite Works, Aberdeen London Office: 64, Finsbury-pavement, E.C. Quarries: Toadhall and Blackhill, Peterhead.

EASTON, J., and SON, Granite Works, Northernhay-street, Exeter, Quarries, Bideford, Devon.

HOSKIN, W., and CO., Cornish Granite Quarries, Penryn.

MACDONALD, ALEX., and CO., Ltd., 374, Euston-road, N.W., and 190, West Regent-street, Glasgow Quarries and Works, Aberdeen.

GRATES—

SHORLAND, E. H., and BRO., Drake-street Works, Stretford-road, Manchester.

HEATING APPARATUS—

ASHWELL and NEBBIT, Ltd., late W. W. Phipson, 12, Great James-street, W.C.

GRINDY, J., 30, Duncan-terrace, City-road, London, N.

MACFARLANE, W., and CO., Saracen Foundry, Glasgow.

MESSENGER and CO., Loughborough, Leicester, and 124, Victoria-street, Westminster, S.W. (See fortnightly advt.)

STRIDE and CO., 45, Canaburg-street, N.W., showrooms, 67, St. Paul's Church-yard, and 189, Piccadilly, W.

HEMP AND WIRE ROPES—

DIXON and CORBITT, and R. S. NEWALL and CO., Ltd., 190 Strand, London, W.C.

HORTICULTURAL BUILDINGS—

HOPE, HENRY, and SONS, Ltd., Works, Lionel-street, Birmingham, London, 30, Victoria-street, S.W., Glasgow, 21, Clare-street; Newcastle-on-Tyne, 65, Northumberland-street, Glasgow, 134, St. Vincent-street.

MESSENGER and CO., Loughborough, Leicester, and 124, Victoria-street, Westminster, S.W. See fortnightly advt.

HOT-WATER ENGINEERS—

BEAVER and SONS, 35 and 36, Westgate-street, Gloucester London Office and Showrooms: 27, Victoria-street Westminster, S.W.

HYGIAN ROOF BUILDING COMPOSITION—

WHITE, WILLIAM, Great Western Works, Aberystwyth.

IRISH MARBLES—

GRINDY, J., 30, Duncan-terrace, City-road, London, N.

IRISH MARBLE CO. (R. Colles), The Marble Mills, Kilkenny, Ireland.

JOINERY—

JANSEN and CO., Belvedere-road, Lambeth, S.E.

GOUGH, LAMOND and HENSHAW, Ltd., Clifton-street, Lower Brompton, Manchester.

NIGHTINGALE, B. F., Albert Works, Albert Embankment, S.E.

KAURI PINE—

HUDSON, B. J., and SONS, Dry, and in all thicknesses, 33, Whitfield-street, W., 224, Store-street, W.C., and 61, Endell-street, W.C.

LATHS (Hand-cloven Ceiling)—

N. & S. G. H. DUNN & CO., Ltd., Warrington.

LAUNDRY ENGINEERS—

ASHWELL and NEBBIT, Ltd., late W. W. Phipson, 12, Great James-street, W.C.

BRADFORD, THOMAS, and CO., Crescent Ironworks, Salford, Manchester, and 140 to 143, High Holborn, London, W.C.

SCHEFFER, ALEX. W., and SONS, Ltd., Phoenix Foundry, Kewbury.

(See next page.)

LLOYD and LLOYD, Albion Talc Works, Birmingham.

SHORLAND, E. H., and BRO, Drake-street Works, Stretford-road, Manchester.

THOMERSON, CHAS., 263, and 265, Hackney-road, N.E.

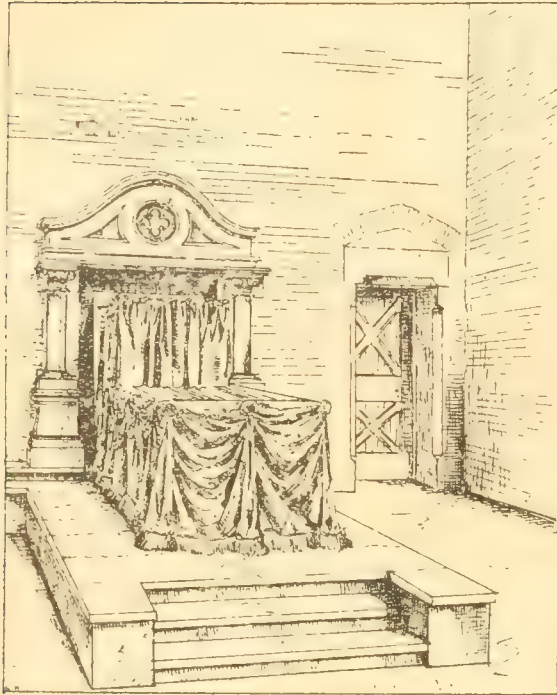
ARLESEY, BEDFORDSHIRE.

PROFESSIONAL AND TRADE SOCIETIES.

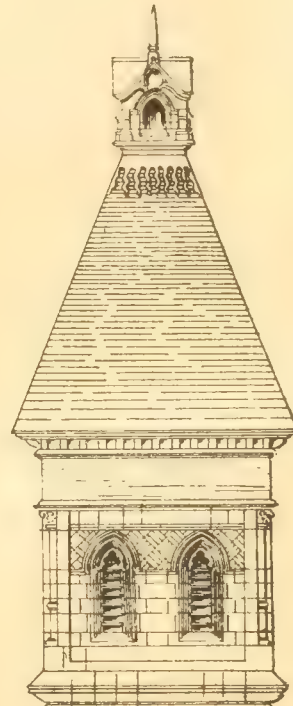
The case against Hugh Livingstone, of 95, Millbrae-road, Glasgow, in which he is charged with having obstructed the traffic over Millbrae Bridge, was further considered at Glasgow on Saturday. Mr. Livingstone claimed to be the proprietor of a portion of the ground upon which the bridge is built, and his action was taken with a view of forcing the corporation to admit his claim. Mr. Nisbet, City Master of Works, who was again examined on the question, submitted a plan of the ground, and stated that it had now been decided that a portion of the ground upon which the bridge was built belonged to Mr. Livingstone. The corporation, however, were not aware of that when they started operations on the bridge. The magistrate intimated that he would give his decision on Feb. 20.

WE illustrate to-day the designs, by Mr. H. Percy Adams, F.R.I.B.A., 28, Woburn-place, Russell-square, London, for the rebuilding of the Royal Infirmary at Glasgow. As we have previously mentioned, designs were invited by the infirmary committee from six Scotch and two English architects. The designs of both the latter we have now illustrated. The competition has been an exceedingly unsatisfactory one almost from the commencement, plans being sent to the competitors which were suggestions of what the committee desired. These plans were so terribly at fault that several of the competitors entirely ignored them. An endeavour has been made in these plans to keep to the spirit of the suggestions in designing a hospital divided practically into three parts—comprising a surgical house, a medical house, and a general administrative building situated centrally between them. Each flat of wards was also to have its own medical officers' apartments, outpatients' room, and either operating-theatre or lecture-theatre. One great difficulty of the problem set was to design a building having wards on six floors without sacrificing in any way the wards, &c., to the elevations. Several of the designs submitted ignored this by placing the upper floors of wards in the roofs with dormer windows—certainly an undesirable arrangement. The long perspective is taken from an unfortunate point of view, but was made chiefly to illustrate clearly the approaches to the several buildings. The connecting bridges between the buildings are only made 7ft. 6in. high, so as to allow of a blow-through on each floor. The most unsatisfactory feature of this important competition is that the design the committee has selected was not placed in the first four adjudged best by the assessor, Dr. Rowand Anderson. This makes the third large hospital competition decided in Glasgow during the last few months in which committees have ignored the assessor's recommendations. This case, perhaps, is the most aggravated in that all the competitors were selected by the committee. It seems a pity that the Glasgow architect now selected could not have been given the work without competition, and so have saved the infirmary £800 in honorariums and an assessor's fee rumoured at £500.

HULL CREMATORIUM .



THE CATAFALQUE.



SOUTH ELEVATION .



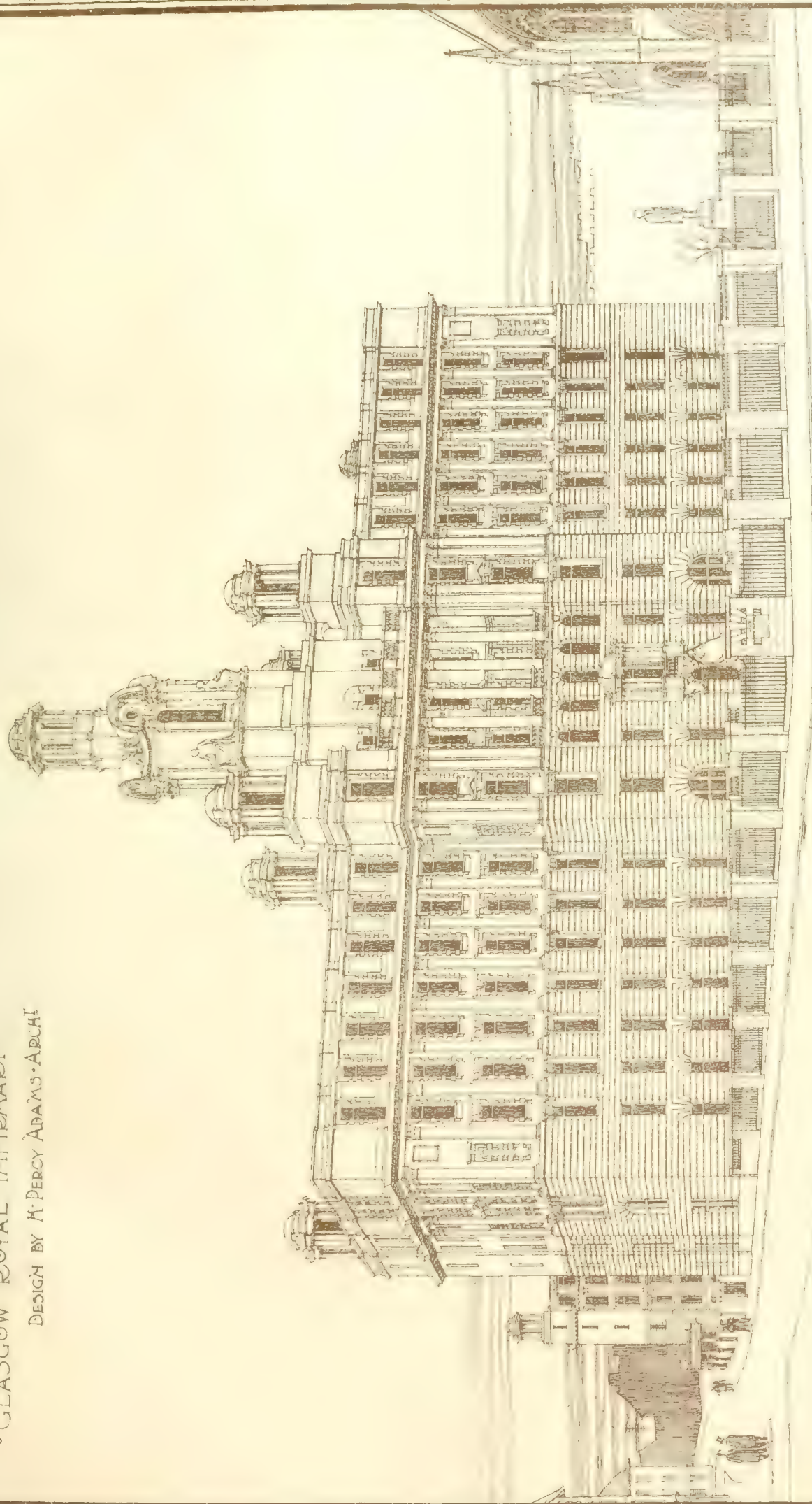
• HOUSE FOR PROFESSOR JAMPSON DURHAM • G. H. KITCHEN ARCHT

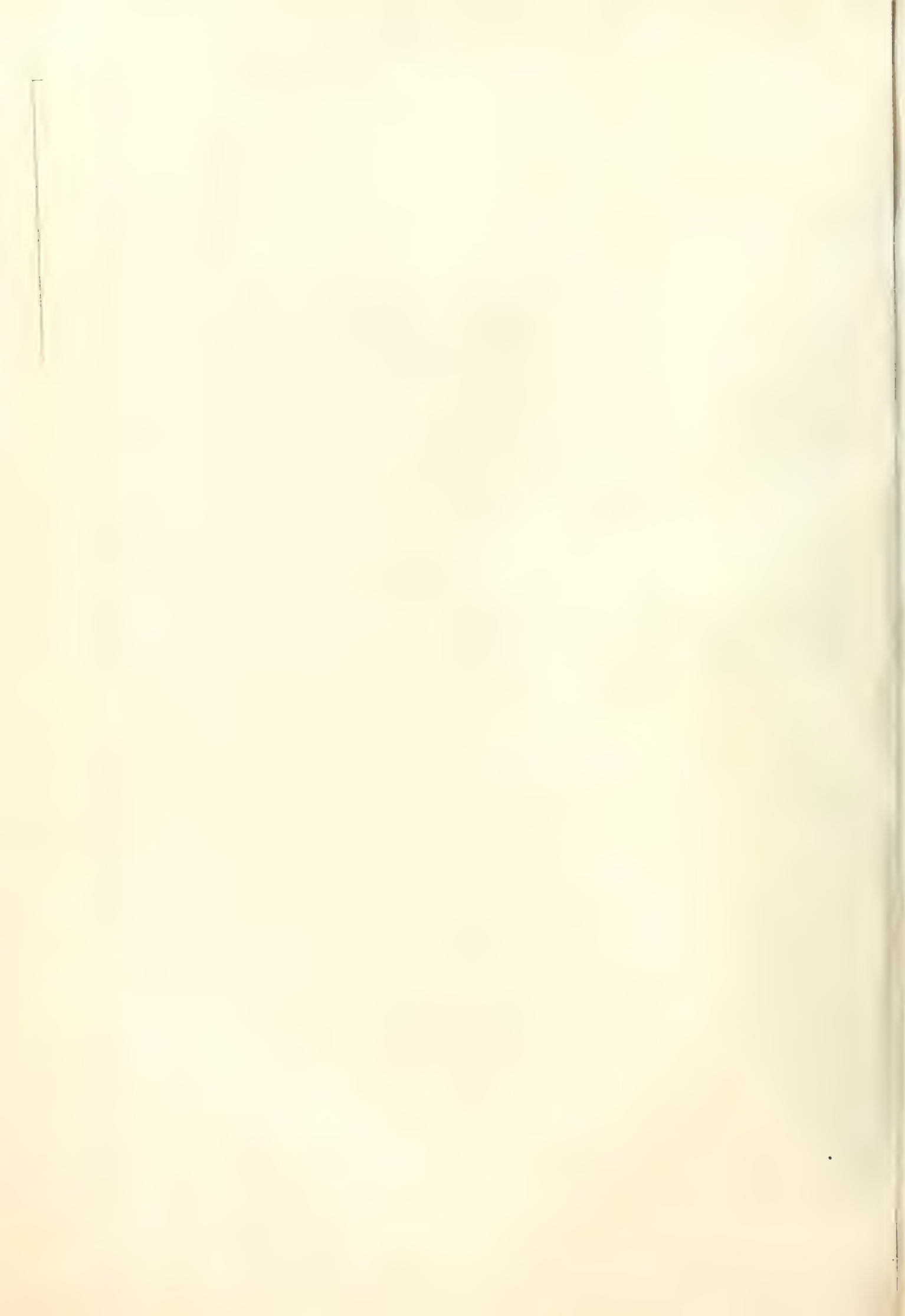


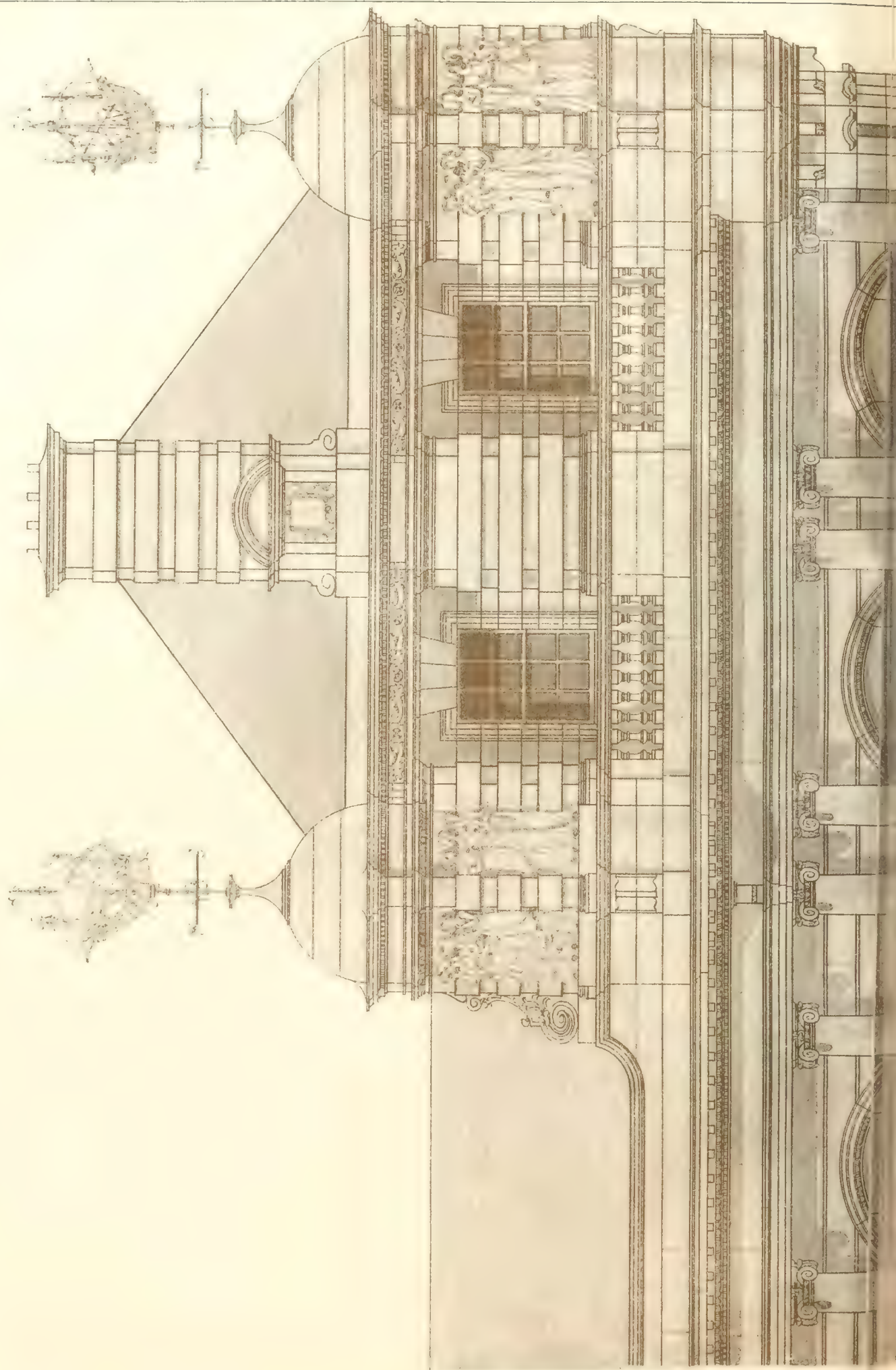
• HOUSE AT YARMOUTH ISLE OF WIGHT G. H. KITCHEN ARCHT •

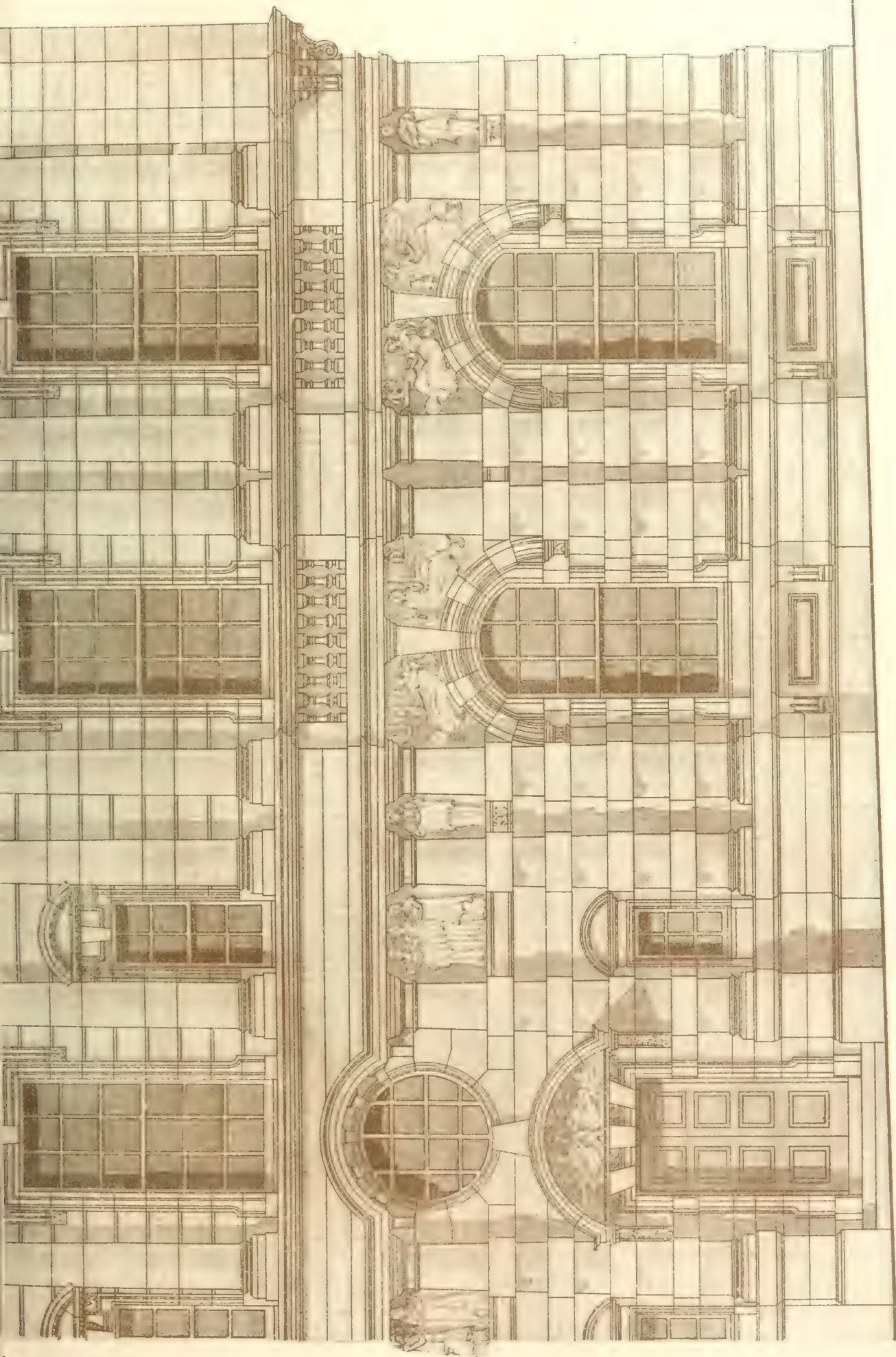
PHOTO TINT

• GLASGOW ROYAL INFIRMARY •
DESIGN BY H. PERCY ADAMS • ARCHT

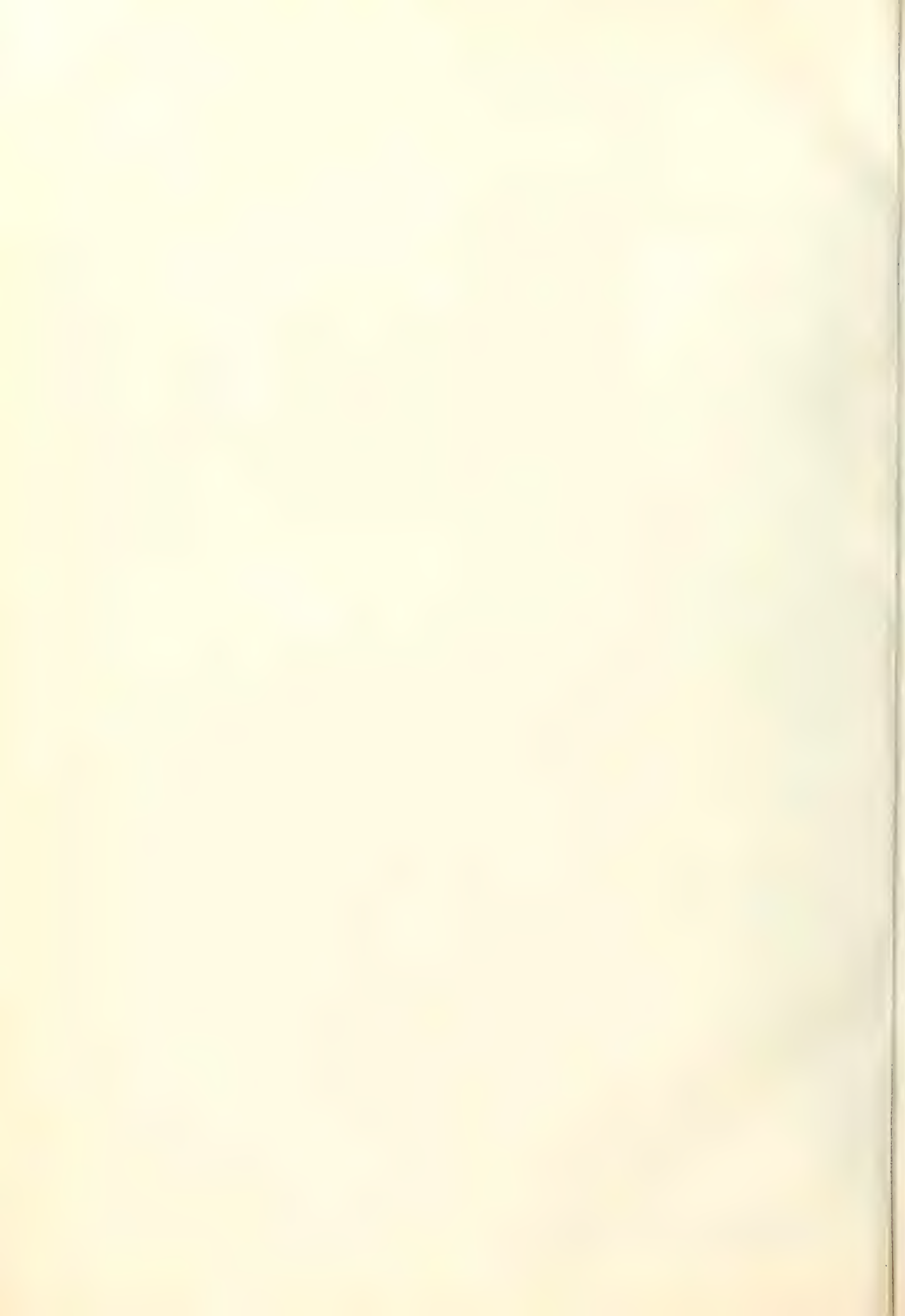






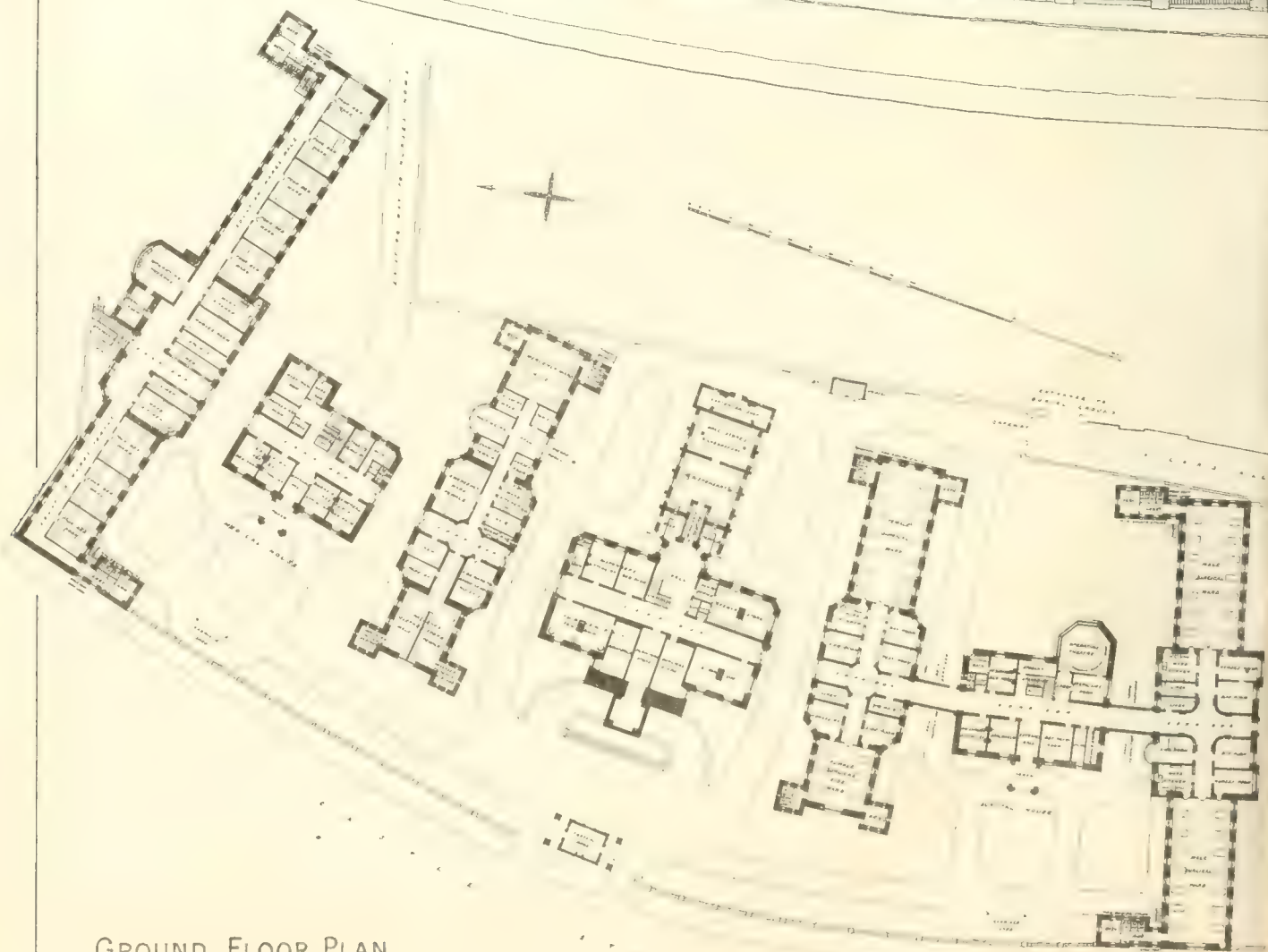


BUILDING FOR LLOYDS REGISTER & SHIPPING LLOYDS AVENUE E.C.
THE COLLECTOR AREA

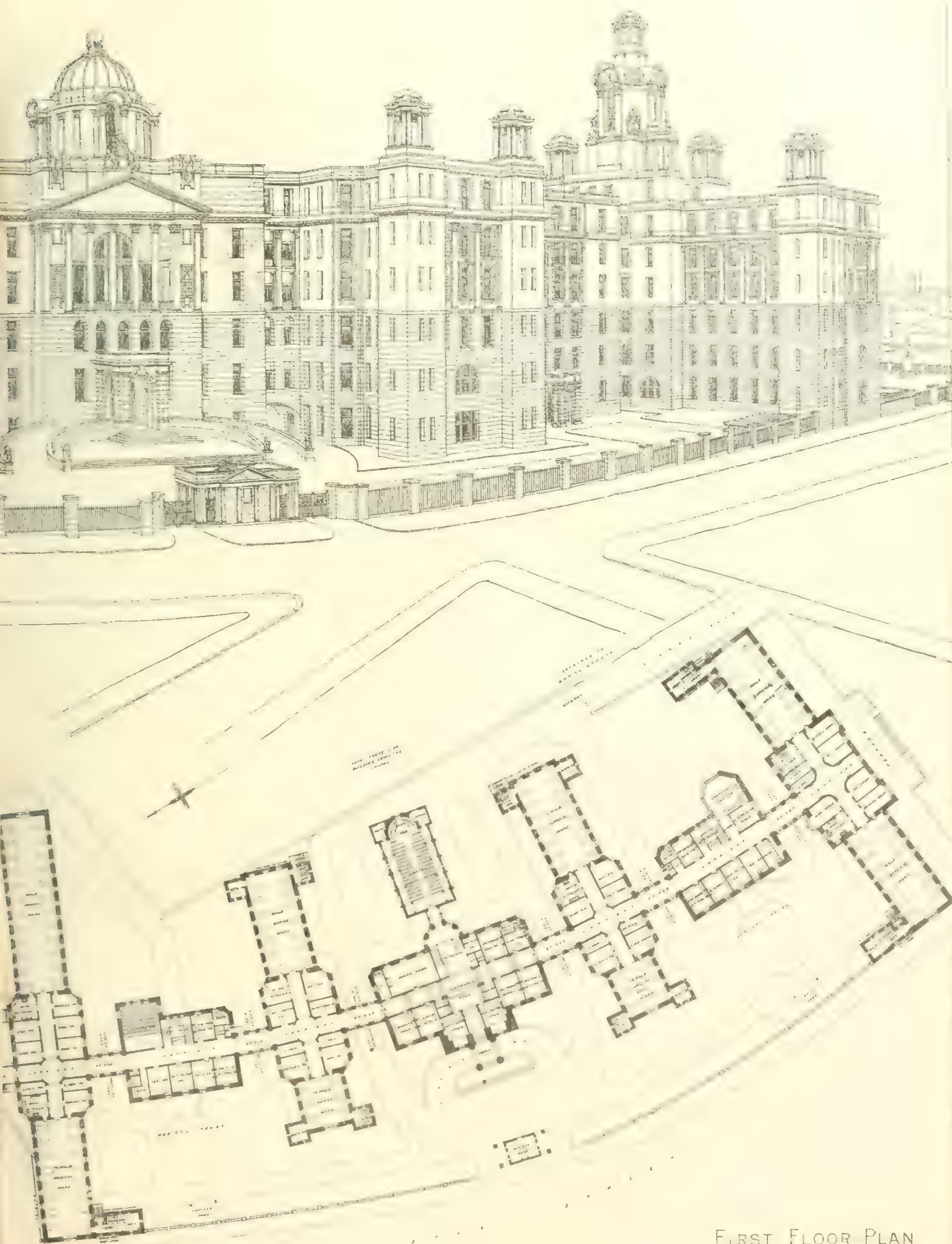


• GLASGOW ROYAL INFIRMARY •

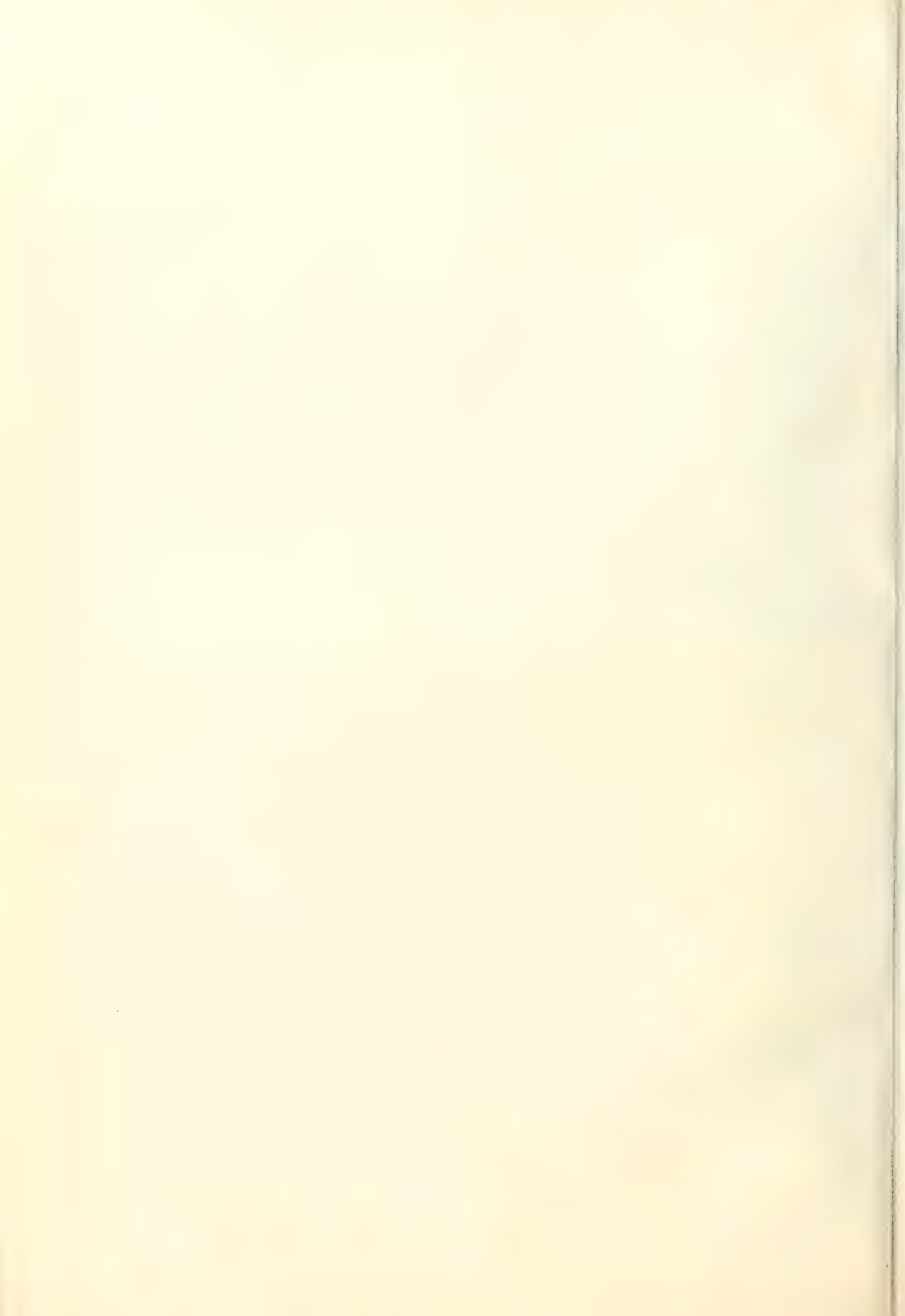
DESIGN BY H. PERCY ADAMS ARCHT



GROUND FLOOR PLAN



FIRST FLOOR PLAN

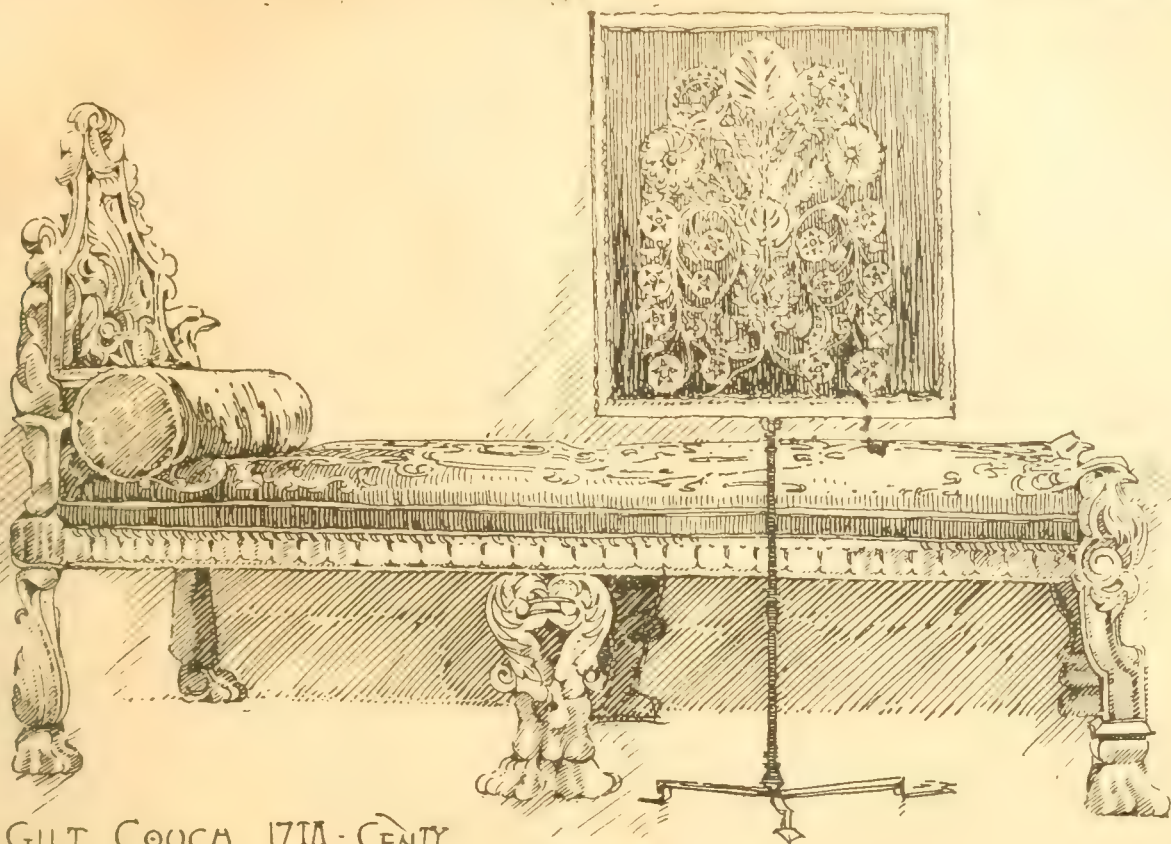




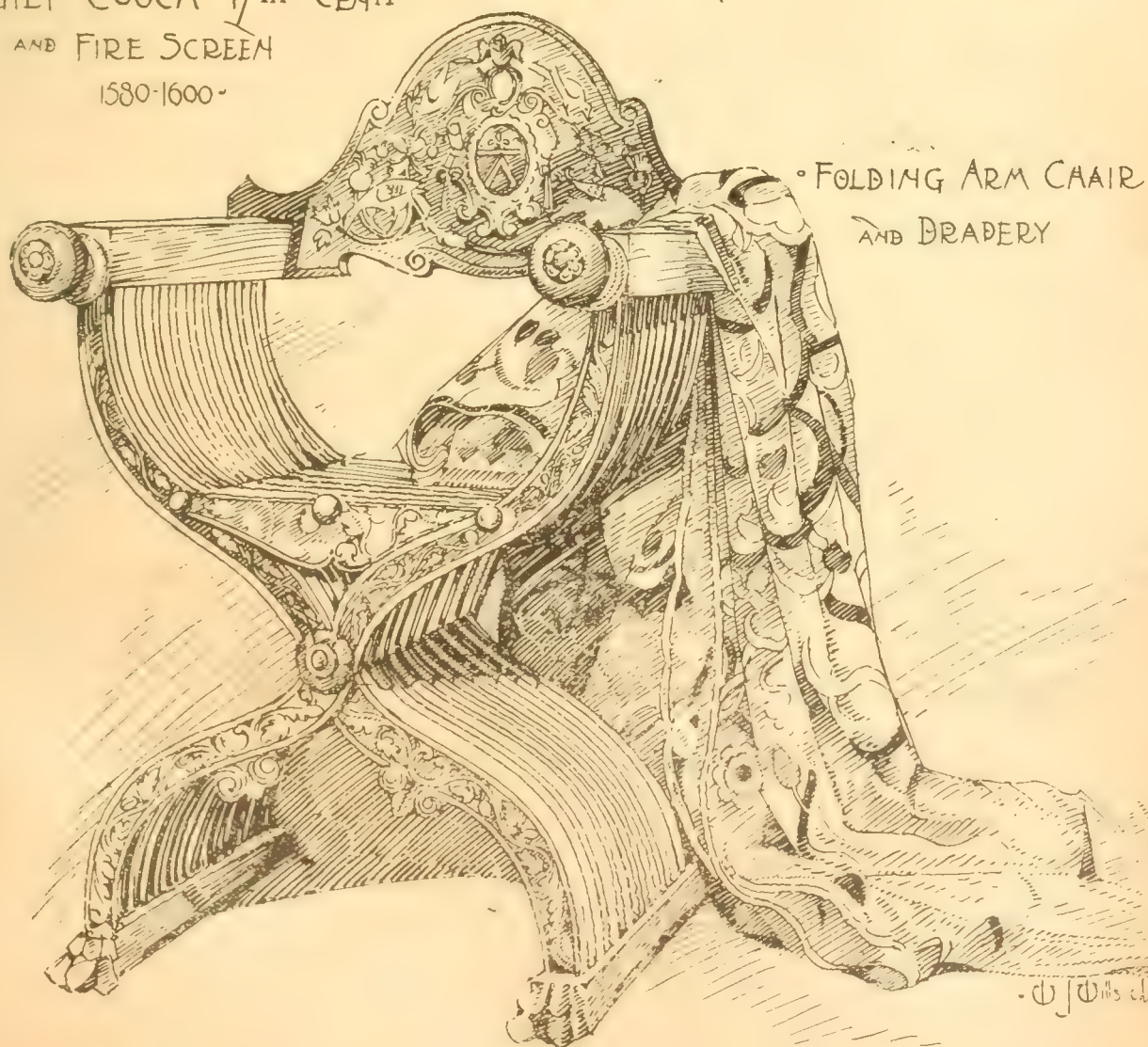


CARTOON OF CATHAL HOUSE

“A PROCESSION OF THE AGONY”
“ROYAL ACADEMY PRIZE DESIGN FOR THE DEcoration OF A PUBLIC BUILDING”
- BY FLORENCE ELEANOR CHADLIN -



GILT COUCH 17TH-CENTY
AND FIRE SCREEN
1580-1600-



FOLDING ARM CHAIR
AND DRAPERY

W. J. Wills ch.

Our Office Table.

THE British Fire Prevention Committee are organising a novel demonstration in the form of a fire-proofing section in connection with the Biennial Building Trades Exhibition at the Agricultural Hall in April next. A large gallery has been retained for exhibits showing the progress made in combating fire by improved materials and systems of construction. This exhibition will not only be the first of its kind in any country, but will show that the reduction of fire risk by improved forms of building has now its own independent industrial position, claiming not only the attention of professional men but the study of our local authorities. The British Fire Prevention Committee, over which Mr. Edwin O. Sachs, architect, presides, is issuing a number of invitations to the municipal, local, and other public authorities to attend the exhibition.

The deputation from the London County Council, who, accompanied by Mr. Riley, their superintending architect, visited Glasgow on Thursday in last week in order to inspect the model workmen's dwellings erected by the corporation of that city, seem to have been favourably impressed by what came before them. Mr. Waterlow, convener of the Committee on the Housing of the London Poor, at the conclusion of the inspection expressed pleasure and surprise at what he had seen. He described Glasgow as a paradise for the working man, and considered that the Glasgow Corporation were unsurpassed for practical enterprise. The deputation had inspected houses built of the best material, and according to modern ideas, the rents, payable monthly including rates, being exceedingly low. London had to face the grave problem of dear ground and materials, which stood in the way of cheap houses. The deputation expressed astonishment at the fact that the latest tenements at Haighill, Glasgow, were built at a cost of 4½d. per cubic foot, whereas in London the cheapest cost was 8½d., although Glasgow houses were of stone and London houses of bricks.

MR. GEORGE W. POTTER, of Hampstead, delivered his inaugural address as President of the Institute of Estate and House Agents on Wednesday evening, taking as his main topic the question of the housing of the poor. A more troublesome class of property could not be placed under their charge than that of working-men's dwellings. In London alone the County Council had, since 1889, spent £2,930,000 in order to house 32,000 persons, which, after deducting the cost of clearing the unhealthy areas, worked out at the cost of £53 per head; but if, as ought to be done, they did not deduct the clearance, it worked out at the enormous cost of £91 per head. The cost of the Boundary-street scheme was higher still—nearly £118 per head. Unfortunately not five per cent. of the dispossessed slum-dwellers returned to inhabit these healthier dwellings. The huge, lofty buildings in London and other large towns, called flats, were the direct consequence of the increased value of land and of the cost of building. Buildings of that kind inhabited by working men were called artisans' dwellings, while those inhabited by persons of a different social position were dignified by the name of mansions. The difference between them was, however, only one of degree, and many professional and other considerations were the same in dealing with either. The president also referred to the increasing cry for the taxation of ground values. The proposal, if carried out as suggested by some people, would involve double taxation of the same property. There was only a difference in degree between the lessor who leased his property for 21 years at a certain rent, on condition that the lessee should pay all rates and taxes, and the ground landlord who leased his property for 99 years on the same condition.

MR. HENRY P. PELHAM, of Trinity College, Oxford, is making an appeal for financial aid to the recently-established British School in Rome. The director, Mr. Rushforth, is now in Rome, and negotiations are proceeding for the hire of a set of rooms, admirably adapted to the immediate needs of the school, in the Odescalchi Palace. But the funds at the disposal of the committee, though sufficient to justify them in going thus far, are altogether inadequate for the maintenance of the school. The amount collected up to the present is about £850, of which a little over £200 is made up of annual subscriptions. The necessary expenditure on the salary of the director, rent of

rooms, taxes, and service will amount to nearly £500. If, therefore, the experiment which has been made is to have a fair trial, there must be a large addition to the annual subscription. To do its work efficiently as a centre for British students in Rome, the school should have an income of at least £1,000 a year.

THE Public Libraries Committee of the Hampstead Borough Council have had under consideration the question of the provision of a temporary art gallery at the town-hall until such time as a permanent art gallery can be erected, and they have decided to recommend the council to appoint Sir L. Alma-Tadema, R.A., Mr. G. A. Storey, A.R.A., the Hon. John Collier, Mr. David Murray, A.R.A., and Mr. Basil Bradley, R.W.S., as an advisory committee to assist the Public Libraries Committee in the choice of works of art to be exhibited.

THE Estates Committee of the Birmingham City Council have just decided to proceed with the completion of the original scheme of improvement, under which Corporation-street was cut through the centre of the city. The first proposal was to carry Corporation-street straight through from New-street to Aston-road, but the new thoroughfare was stopped at the junction of Stafford-street and Aston-street, and in this state it has remained for some years. The committee now propose to take the opinion of the council as to whether they shall finish the work, and thus complete the scheme. The necessary land has already been acquired by the city, and the property is all let on "short" tenancies, so that the cost of the work will be limited to the demolition of house and other property and the laying out of the new portion of the street. This, according to the original plans, is intended to start at the junction of Lancaster-street and Potter-street. From there, in an almost straight line, it crosses Staniforth-street at the corner of Fisher-street, Moland-street near the corner of Digby-street, and Legge-street, and opens out on to the Aston-road close to Bagot-street and the canal bridge. At present Corporation-street is 850 yards long, and should the council give the committee instructions to proceed with the work another 633 yards will be added to it, to the manifest advantage and improvement of the city.

THE Halifax Town Council, at their next meeting, will have submitted to them by the tramways committee a proposal that is unique, so far as this country is concerned. Halifax is an exceedingly hilly district, and how to extend the corporation electrical tramways to some of the adjacent populous districts, having regard to the inclines, is a matter that has for some time engaged the attention of the tramways committee. What is now suggested is that the corporation shall try the experiment of a lift. The route on which the trial will be made, if the proposal of the committee is accepted by the town council, will be on the intended extension to Elland. From the centre of Halifax to Salterhebble a fairly level track is experienced, but between that point and the Elland-road there is a steep hill, and it is here that it is proposed to place the lift. The tramcars would be run over the level from Halifax direct on to the lift, which would deliver the cars on to connecting lines on the Elland-road, whence they would proceed to Elland. The land for the lift, on a site near Dudwells, has been negotiated for by the tramways committee. A similar system was seen working in America during a visit there, on behalf of the town council, by Mr. J. H. Whitley, M.P., and on his recommendation the proposal is being brought forward. Should the experiment prove a success, a similar system will be carried out for Southowram, which is situated beyond Beacon Hill. In the event of a lift being introduced for the Southowram district, it might be utilised during the night for the waggons from the well-known stone quarries, and thus yield additional revenue for the corporation.

A HUNDRED and fifty millions of bricks per annum is an output which staggers calculation. That, however, is the modest total manufactured last year by Messrs. Eastwood and Co., Limited, at their various works. The latest of these erected is at Woburn Sands, and a capital illustration in black and white embellishes the useful wall-calendar for 1901 just to hand, designed by Mr. O. M. Ayrton. The machine-made bricks produced by Messrs. Eastwood and Co. are made at Arlesley, Bedford, Fletton Siding, Peterborough, Yaxley, and Woburn Sands. The stocks come principally from the great Essex and Kent brick-

works belonging to the firm, and from West Drayton.

THE change of volume in cement in setting is apparent, not real, according to Mr. H. Le Chatelier, an American engineer. He gives the results of a series of tests conducted with many cementing materials, in a tube having a bore of about 4 millimetres ending in a bulb of a capacity of about 70 cubic centimetres. From 10 to 50 grammes of the cement to be tested were made into a thin slip with 50 grammes of water and rapidly introduced into the bulb, previously exhausted of air. The contents were exhausted and enough water added to bring the liquid about half-way up the vertical tube, which was then sealed at the top to prevent evaporation. Readings were subsequently taken of the water-level in the tube, which indicated the exact degree of contraction taking place. The tests show that all hydraulic binding agents manifest on hydration an increase in apparent volume but a decrease in absolute volume.

THE superstructure of the Santa Cruz bridge at Manila, P.I., now being built for the United States Government on a substructure completed about two years ago by the Spanish Government, consists of one 130ft. centre span and two 120ft. side spans, each having three pin-connected Pratt trusses 19ft. 11in. apart on centres. The floor-beams are web-connected to the vertical posts above the lower chord-bars, and are made with two main sections and two outside cantilever sections to carry the 5ft. sidewalks. The longitudinal I-beam stringers are seated on bracket shelves riveted to the floor-beam webs, and support buckle-plates, concave side up. There is a filling of 12in. of concrete or macadam on the buckle-plates, which is confined laterally between light longitudinal plate girder curbs at each end of each main section of the floor-beams, and by fascia girders across the outer ends of the sidewalk brackets. The bridge is proportioned for a live load of 5,310lb. per lineal foot, 1,910lb. of which is assumed to be carried by the centre truss. The dead load of the roadway is assumed at 165lb. per square foot. The designs were made by the Berlin Iron Bridge Company, and the work is being built by the American Bridge Company.

MEETINGS FOR THE ENSUING WEEK.

MONDAY.—Royal Institution of British Architects. "Difficulties and Hindrances in Producing Modern Architecture," by J. J. Stevenson, F.S.A. 8 p.m.

Society of Arts. "Elementary Art Education." Cantor Lecture No. 2, by J. Liberty Tadd. 8 p.m.

Liverpool Architectural Society. "Saracanian Architecture of Cairo," by Ronald P. Jones, B.A.

Leeds and Yorkshire Architectural Society. Annual Dinner.

TUESDAY.—Institution of Civil Engineers. "The Present Condition and Prospects of the Panama Canal Works," by James Thomas Ford, M.Inst.C.E. 8 p.m.

Society of Arts. "The Commonwealth of Australia," by Sir J. Alexander Cockburn, K.C.M.G., Agent-General for South Australia. 4.30 p.m.

Architectural Association of Ireland. "Two Mont St. Michaels—Irish and Norman," by P. J. O'Reilly. Grosvenor Hotel, Dublin. 7.45 p.m.

WEDNESDAY.—Society of Arts. "The Proposed High-Speed Electrical Monorail between Liverpool and Manchester," by F. B. Behr. 8 p.m.

Northern Architectural Association. "Recent Data Concerning Concrete Beams and Floors," by James Bruce, of Newcastle. 7.30 p.m.

FRIDAY.—Glasgow Architectural Craftsmen's Society. "Legal Points Relative to Building," by John M. Arthur. 8 p.m.

Birmingham Architectural Association. "Paris Exhibition," by E. W. M. Wonnacott, A.R.I.B.A. 6.45 p.m.

Institution of Civil Engineers. "Sewage Treatment," by C. Johnston, Stud.Inst.C.E. 8 p.m.

Whicham Church, near Silecroft, is to undergo restoration by Messrs. Austin and Paley, architects, of Lancaster. Whicham is situated in one of the prettiest valleys of Cumberland.

Mr. Bruce Joy's studio at Hindhead has been totally destroyed by fire. All its contents were destroyed, and the loss to the artist will be considerable.

The Folly Field adjoining the Western Promenade at Penzance has been given to the corporation by the owner, Mr. T. R. Bolitho, as a public recreation ground.

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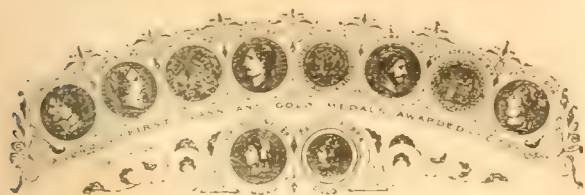
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20	20×20	8 " 12	10 "	3 10 0
24	24×24	10 " 14	12 "	4 10 0
27	27×27	11 " 16	14 "	5 5 0
30	30×30	12 " 18	15 "	6 10 0
36	36×36	15 " 21	18 "	8 15 0
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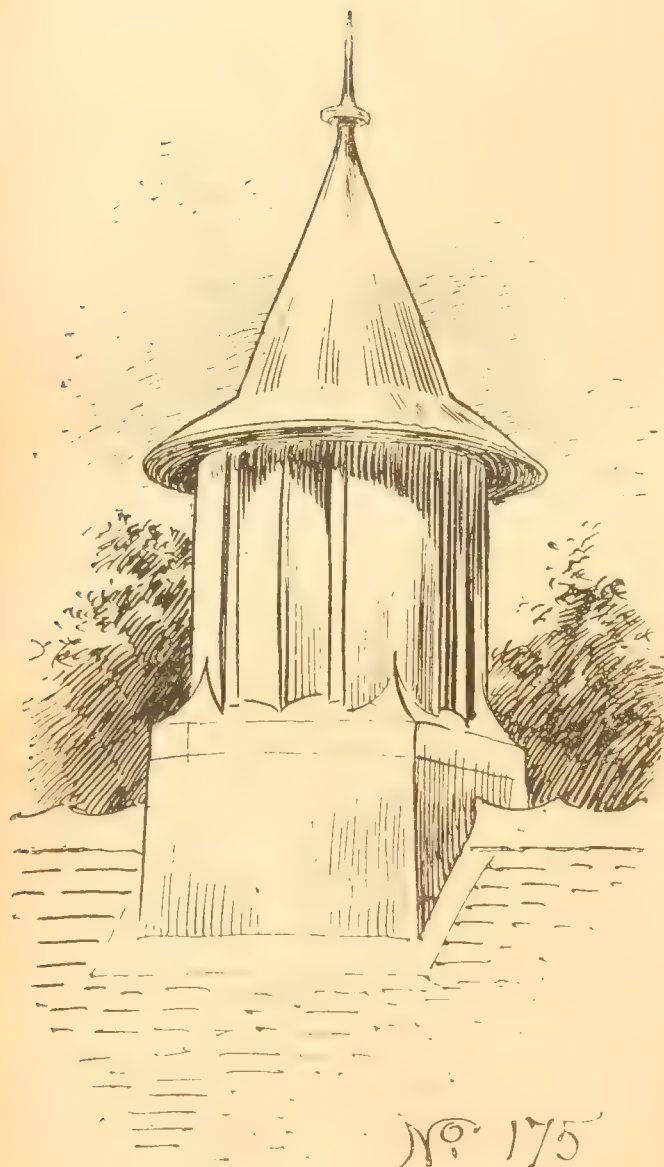
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WATER SUPPLY AND SANITARY MATTERS.

CHERRY HINTON.—Colonel Marsh, R.E., an inspector of the Local Government Board, held an inquiry at Cherry Hinton, Cambridge, concerning the application of the Chesterton Rural District Council for sanction to a proposed loan for works of sewerage and sewage disposal. The engineer's estimate of the cost of the works was £14,000. The district council were represented by Mr. Bartley Dennis, barrister, London. Mr. H. Bertram Nichols, consulting engineer, of the firm of Messrs. Hensley, Son, and Nichols, of Westminster, gave evidence for the district council, also Mr. Frank Waters, of the firm of Messrs. Waters and Worrall, of Cambridge, engineers for the scheme. The scheme was opposed by the town council of Cambridge, also the Cambridge Waterworks Company. Mr. Strachan, engineer, of Westminster, gave evidence on behalf of the water company.

HEATON.—The scheme of extension at the Heaton outfalls is now approaching its last stage. It was sanctioned by the Local Government Board without any alterations or suggestions. Possession of the land has been got, and the corporation have instructed Messrs. Malcolm Paterson and Sam Shaw, M.M.Inst.C.E., who are joint engineers, to prepare for letting the contracts. The works consist of three miles of intercepting sewers, new tanks, buildings, machinery, storm-water filter, and land filtration beds, and the engineers' estimate, inclusive of land, is about £10,000. It is expected that the works will be let before the middle of March.

Mr. J. Lewis Thomas, F.S.A., late Chief Surveyor, War Office, and Mrs. Lewis Thomas celebrated their golden wedding on Sunday, at 26, Gloucester-street, Warwick-square, S.W.

At a meeting on Tuesday of the Pershore Rural District Council plans were submitted for the erection of a house with a thatched roof, but it was pointed out that the by-laws did not permit this. Mr. Sheldon protested against the abolition of thatched houses, which were one of the chief features of picturesque Worcestershire. They were also cool in summer and warm in winter. It was agreed to take steps with the view of permitting thatched houses to be erected.

Colonel C. H. Luard, R.E., Local Government Board inspector, held an inquiry at the Guildhall, Gloucester, on Tuesday, with reference to the city council's application to borrow £3,000 for street improvements.

A Baptist chapel was opened at Horfield, near Bristol, on Wednesday. Messrs. Drake and Pizey, of Bristol, are the architects, and Mr. R. F. Ridd is the contractor.

Mr. R. H. Bicknell, M.I.C.E., a Local Government Board inspector, held an inquiry at the Town Hall, Birkenhead, on Tuesday, into an application by the corporation for a provisional order, under the Housing of the Working Classes Act, 1890, to confirm a scheme to demolish property in the neighbourhood of Egerton-street and Chester-street.

In the case of the application for discharge from bankruptcy made on behalf of Edward Alfred Beer and Frederick George Gash (described in the receiving order and trading as Beer and Gash), Wharf-road, City-road, E.C., builders, the order of discharge has been suspended for five years ending Dec. 18, 1905.

The scare as to the safety of St. Stephen's Parish Church, Edinburgh, was happily set at rest on Monday. At a visitation made to the place by the Dean of Guild Court, it was stated by Mr. A. H. Crawford, architect, of Edinburgh, who had gone thoroughly into the matter, that the church foundations and walls were entirely unaffected by the collapse of a retaining wall on the north-east side of the edifice. The church was built by the corporation on ground belonging to them in 1827, and the corporation owned and managed the city churches down to 1860, when in that year, under the Annuity Tax Act, the Ecclesiastical Commissioners were constituted, to whom was transferred the whole rights of administration and custody of the city churches.

The memorial-stone of the new Roman Catholic Church of St. John, Hoddle-street, East Melbourne, which is being erected from designs by Messrs. McCrae and Toole, architects, Melbourne, was laid by Archbishop Carr in December. The plan of the church is a plain oblong, 82ft. by 41ft., with apse and vestries. Seating accommodation has been provided for 600, and provision has been made for future extension. The church is being built of Northcote bricks, with Stawell stone dressings and terracotta enrichments. The style is a modern adaptation of the Lombardic Romanesque, and a special feature of the front is a Celtic cross of Stawell stone arranged between the windows. In the apex of the gable is a representation of the Southern Cross constellation. The contractor is Mr. C. O. Luff, and the cost will be £2,800.

STATUES, MEMORIALS, &c.

BURNMOUTH.—On the Roman Catholic portion of the new cemetery at East Burnmouth a granite Calvary, of the type of those seen in Finistère, has just been set up. The steps stand upon a cairn of rough granite, and upon these rests a monolith over 12ft. high. The upper part of the latter takes the form of a wheeled cross of Celtic character, and upon its front face, carved in the round in the solid granite, is a sculptured statue of the crucified Christ. The memorial has been designed by Sir Francis L. J. Barrow, Bart, architect, of Sunny Glen, Boscombe. It has been made in its entirety and placed *in situ* by Messrs. Harry Hems and Sons, of Exeter. Messrs. Hems have also just erected a memorial close by, also designed by the same architect. It consists of a sculptured representation of Christ crucified, in high relief upon a plain white marble cross, the inscription underneath reading: "Cuthbert Joseph, second son of Sir Francis Barrow, Bart., aged four months, 4th October, 1899."

CHIPS.

At a meeting of the Tavistock Urban District Council on Wednesday week, Mr. Eayers, of Birmingham, was appointed consulting engineer of the new drainage works at a fee of 100 guineas.

The borough council of Holborn have appointed Mr. P. G. Killick (surveyor to the late Clerkenwell Vestry) as their borough surveyor, at a salary of £400 per annum; and Mr. Harley-Hackford (the surveyor to the late St. Luke's Vestry) as deputy surveyor at a salary of £350 a year.

Father Bernard Vaughan will unveil the memorial windows in the baptistery of the Church of the Holy Name at Manchester on Sunday next. Eight new statues of saints in Carrara marble, life-size, have been erected in the nave of the church. They have been imported from Italy, after models selected by Father Vaughan.

Mr. Long, President of the Local Government Board, has promised to receive a national deputation on the housing question after the reassembling of Parliament.

The Metropolitan Asylums Board approved, at their meeting on Saturday, plans prepared by Messrs. T. W. Aldwinckle and Son for the provision of accommodation for a medical officer and the male subordinate staff at the South Wharf, Rotherhithe. The estimate for the work is £6,458.

It is proposed to erect a window and brass in St. Ninian's Cathedral, Perth, to the memory of the officers and men of the Black Watch (Royal Highlanders) who have fallen in the war in South Africa.

Mr. W. de Gray Birch is engaged on a "History of the Cistercian Abbey of Neath and other Glamorganshire Monasteries." The work, which will be uniform with the author's "History of Margam Abbey," will be illustrated with facsimiles of charters and seals, and with views and drawings of some of the architectural and sepulchral remains.

The foundation-stone of a new Board school, to be built at a cost of £14,000, was laid at Blackpool on Monday. It will be two stories high, will be lighted by electricity, and will accommodate 1,000 children.

A joint epidemic hospital is about to be built for the burgh of Arbroath and the Arbroath district of Forfarshire. The site is about five acres of ground at Hercules Dan, about a mile out of Arbroath. The plan consists of entrance lodge, administration block, and pavilions for various infectious diseases. Accommodation is provided for thirty-five beds in all—eighteen for scarlet fever, ten for typhoid fever, five for diphtheria, with an operating ward; and two beds for observation block. There is also a washhouse and laundry block. The total cost of the buildings, inclusive of furnishings, but exclusive of site, is £12,247. The plans have been unanimously adopted, and it has been agreed to proceed with the work forthwith.

Baptist headquarters are to be built in the new Strand-to-Holborn thoroughfare on land given by the London County Council as compensation for the removal of Kingsgate-street chapel. The architect is Mr. John Belcher, A.R.A. Hitherto the denomination has been practically without official headquarters, only renting a room or two at the Baptist Missionary Society's House in Farnival-street. The plans of the new building not only give accommodation for the Baptist Union and its agencies, but will also allow it to take over the business of the Baptist Tract and Book Society; while the ground floor, divided into shops, will bring in a paying revenue.

The electric power and lighting committee of the corporation of Liverpool have decided to make application to the Local Government Board for sanction to the borrowing of £300,000 for purposes connected with the supply of electrical energy.

LATEST PRICES.

IRON, &c.		Per ton.	Per ton.
Rolled-Iron Joists, Belgian	£2 10 0	to	£24 10 0
Rolled-Steel Joists, Belgian	2 10 0	to	1 10 0
Wrought-Iron Girder Plates	2 10 0	to	1 10 0
Bar Iron, standard	5 7 6	to	8 7 6
Do., Lowmoor, Flat, Round, or Square	20 0 0	to	20 0 0
Do., Welsh	5 15 0	to	6 17 6
Boiler Plates, Iron—			
South Staffs.	7 17 6	to	8 5 0
Best Sheet-Iron	1 10 0	to	1 10 0
Builders' Hot Iron, for building, &c.	£10 10 0	to	£10 10 0
Builders' Hot Iron, galvanised	£10 10 0	to	£10 10 0
Galvanised Corrugated Sheet Iron			
No. 18 to 20. No. 22 to 24.			
6ft. to 8ft. long, inclusive gauge	£12 10 0	to	£13 0 0
Best ditto	12 10 0	to	13 0 0
Cast-Iron Columns	£2 10 0	to	£2 10 0
Cast-Iron Stanchions	1 10 0	to	1 10 0
Rolled-Iron Fencing Wire	11 15 0	to	12 15 0
Rolled-Steel Fencing Wire	11 15 0	to	12 15 0
Galvanised	13 0 0	to	14 0 0
Cast-Iron Sash Weights	6 5 0	to	6 10 0
Cut Clasp Nails, 3in. to 6in.	12 0 0	to	13 0 0
Cut Floor Brads	11 15 0	to	12 15 0
Wire Nails, Points de Paris—			
0 to 7 8 9 10 11 12 13 14 15 16	11 15 0	to	12 15 0
Cast-Iron Socket Pipes—			
6in. diameter	£4 17 6	to	£7 5 0
4in. to 6in.	6 15 0	to	7 0 0
7in. to 24in. (all sizes)	6 15 0	to	7 0 0
[Coated with composition. 2s. 6d. per ton extra; turned and bored joints, 5s. per ton extra.]			
Pig Iron—			
Cold Blast, Lilleshall	105s. 8d.	to	110s. 8d.
Hot Blast, ditto	57s. 8d.	to	62s. 4d.
Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b.:—			
Gas-Tubes	20 p.s.		
Water-Tubes	55 "		
Steam-Tubes	50 "		
Galvanised Gas-Tubes	47s "		
Galvanised Water-Tubes	45 "		
Galvanised Steam-Tubes	40 "		
10cwt. casks. 6cwt. casks.			
Per ton.			
Zinc, English (London mill)	£25 0 0	to	£25 10 0
Do., Vieille Montagne	26 0 0	to	26 15 0
Sheet Lead, 3lb. per sq. ft. super.	21 0 0	to	22 0 0
Pig Lead, in lwt. pigs	20 0 0	to	21 0 0
Lead Shot in 2lb. bags	23 0 0	to	24 0 0
Copper Sheets, sheathing and rods	£28 0 0	to	£30 0 0
Copper, British Cake and Ingots	74 15 0	to	75 5 0
Tin, Straits	145 0 0	to	146 0 0
Do., English Ingots	150 0 0	to	151 0 0
Spelter, Silesian	18 7 6	to	19 2 6
TIMBER.			
Teak, Burmah	per load £10 10 0	to	£16 5 0
" Bangkok	10 0 0	to	15 5 0
Quebec Pine, yellow	4 7 6	to	5 5 0
" Oak	3 5 0	to	5 15 0
" Birch	3 0 0	to	6 0 0
" Elm	5 0 0	to	6 0 0
" Ash	3 7 6	to	3 15 0
Danish and Memel Oak	3 5 0	to	4 15 0
Fir	3 0 0	to	4 0 0
Wainscot, Riga p. log	1 17 6	to	3 5 0
Lath, Danish, p.f.	4 0 0	to	6 15 0
St. Petersburg	4 0 0	to	8 10 0
Greenheart	7 15 0	to	8 0 0
Box	7 0 0	to	16 0 0
Sequoia, U.S.A. per cube foot	0 1 9	to	0 2 0
Mahogany, Cuba, per super foot			
lin. thick	0 0 6	to	0 0 7
" Honduras	0 0 6	to	0 0 7
" Mexican	0 0 4	to	0 0 4
" African	0 0 8	to	0 0 8
Cedar, Cuba	0 0 3	to	0 0 3
" Honduras	0 0 8	to	0 0 8
Satinwood	0 0 10	to	0 1 9
Walnut, Italian	0 0 8	to	0 0 7
" American (logs)	0 2 3	to	0 4 6
Deals, per St. Petersburg Standard, 120-12ft. by 1 1/2in. by 1 1/2in.			
Quebec, Pine, 1st	£25 10 0	to	£30 0 0
" 2nd	18 10 0	to	21 0 0
" 3rd	12 10 0	to	14 0 0
Canada Spruce, 1st	11 10 0	to	14 15 0
" 2nd and 3rd	9 10 0	to	10 0 0
New Brunswick	8 0 0	to	11 10 0
Riga	9 10 0	to	18 0 0
St. Petersburg	11 10 0	to	21 0 0
Swedish	11 10 0	to	13 10 0
Finland	12 0 0	to	22 0 0
White Sea	12 10 0	to	22 0 0
Battens, all sorts	5 0 0	to	12 0 0
Flooring Boards, per square of lin.:—			
1st prepared	£0 12 9	to	£0 19 0
2nd ditto	0 11 6	to	0 14 9
Other qualities	0 7 0	to	0 13 9
Staves, per standard M:—			
U.S. ditto	£27 10 0	to	£45 0 0
Memel cr. pipe	220 0 0	to	230 0 0
Memel, brack	190 0 0	to	200 0 0
OILS.			
Linseed	per tun £39 0 0	to	£40 0 0
Rapeseed, English pale	38 10 0	to	39 10 0
Do., brown	29 0 0	to	29 0 0
Cottonseed, refined	21 10 0	to	22 0 0
Olive, Spanish	35 0 0	to	37 10 0
Seal, pale	26 0 0	to	26 10 0
Cocoonut, Cochiti	27 15 0	to	28 0 0
Do., Ceylon	28 15 0	to	28 5 0
Palm, Lagos	17 5 0	to	18 5 0
Olive	0 7 0	to	0 8 0
Lubricating U.S.	per gal. 0 0 8	to	0 0 6
Petroleum, refined	1 6 0	to	1 6 0
Tar, Stockholm	per barrel 0 19 6	to	1 0 0
Do., Arhandel	0 19 6	to	1 0 0
Turpentine, American	per tun 37 0 0	to	37 5 0

Trade News.

WAGES MOVEMENTS.

THE LABOUR MARKET.—The state of employment during December again showed a further decline when compared both with the previous month and with the corresponding month in 1899. In the 138 Trade Unions making returns, with an aggregate membership of 540,102, 21,496 (or 4.0 per cent.) were reported as unemployed at the end of December, compared with 3.2 per cent. in November, and with 2.5 per cent. in the 123 Unions, with a membership of 511,184, from which returns were received for December, 1899. Employment in the building trades has declined in all branches. The percentage of unemployed union members among carpenters and plumbers at the end of December was 4.2, compared with 3.3 in November. The percentage for December, 1899, was 2.5. In the furnishing trades employment is slack. The percentage of unemployed union members at the end of December was 6.8, compared with 4.2 in November, and 4.8 per cent. in December, 1899. Twenty fresh disputes occurred in December, 1900, involving 3,648 workpeople, of whom 1,991 were directly, and 1,657 indirectly, affected. Of these fresh disputes, only one occurred in the building trades. Of the 16 new and old disputes, involving 3,360 workpeople, of which the termination is reported, five, involving 942

persons, were decided in favour of the workpeople; six, involving 676 persons, in favour of the employers; and three, involving 831 persons, were compromised. During December 18,383 workpeople obtained advances averaging 1s. 9½d. weekly per head, and 8,216 sustained decreases averaging 1s. 1½d. weekly per head, the net effect of all the changes being an increase of 10½d. per head in the weekly wages of those affected. The principal increase was that affecting 12,000 bricklayers in the London district. The decreases included 41 building building trade operatives in Scotland.

AMALGAMATED SOCIETY OF CARPENTERS AND JOINERS.—The monthly report of this society shows a considerable increase in the number of unemployed members, due in a measure to suspensions on account of the holidays; but it is also attributable to the slackening-off in the building trades which has been noticeable of late. There are now 2,350 members on donation out of a total roll of 63,355, with 1,218 on sick benefit. Strikes for improved conditions of labour are reported at St. Helens, Belfast, and Bridlington; and at Blackpool, St. Annes, and on a job at Birkenhead the members of the society are, it is stated, "resisting attempts to take away privileges they have for a long time enjoyed."

BLACKPOOL.—The dispute between the union joiners and carpenters at Blackpool and St. Annes and the federated employers has not yet been settled. The point of dispute at Blackpool is a

reduction of the standard wage of 91. per hour to 8½d., notice of which was given by the employers in June last. The notice terminated on December 7, and as the men would not agree to the reduction they were locked out. At St. Anne's the rate was 8½d., and both employers and employed were willing to continue on this basis, but being amalgamated with Blackpool the same action had to be adopted. During the five weeks' duration of the lock-out meetings had been held by both parties, jointly and severally, but without result. Arbitration has been suggested, but the employees decided to have no outside interference. The masters are little concerned about the stoppage, inasmuch as the building trade is quieter in Blackpool at the present time than it has been for many years, and, moreover, there is no difficulty in getting non-union men from Birmingham and other towns to fill up the vacancies and complete the work in hand at the rate of 8½d. per hour. A meeting of employers in all branches of the building trade was held last week, when the question of wages was discussed, but nothing definite was arrived at. The painters have now been on strike about ten months.

NORTH DERBYSHIRE.—The North Derbyshire quarrymen's strike terminated after a conference at Buxton on Saturday. The fifteen hundred men who refused to sign on under the old conditions resumed work on Monday, it being agreed that engagements in future be terminable by a month's notice on either side.

LIST OF COMPETITIONS OPEN.

Tanfield—Three and Four-Roomed Cottages	£10, £5	R. Heslop, U.D.C. Surveyor, Burnopfield	Jan. 25
Bristol—Alterations to Petty Sessional Court and Offices	£100, £50	The Clerk, County Council Offices, Bristol	Feb. 13
Ballarat, Victoria—Soldiers' Statue, Bronze or Marble (cost £15.0, £20.0, £25.00) .....	.....	J. W. Nedwell and W. D. Hill, Hon. Secs., Ballarat, Victoria	14
Nottingham—Sewerage Scheme for the Parishes of Colwick, Gedling and Burton-Joyce .....	.....	C. J. Spencer, Clerk, Public Offices, Basford, Nottingham	Mar. 25
Dudley—Six Villas and Six Cottages	£10	G. W. Waring, Mining Engineer, 42, Wellington-street, Dudley .....	.....

LIST OF TENDERS OPEN.

BUILDINGS.

Walker—Refuse Destructor Buildings	Urban District Council	Handcock and Dykes, 1, Victoria-street, Westminster, S.W.	Jan. 19
Rothiemay—Alterations to House .....	.....	A. Marshall Mackenzie, Architect, 343, Union-street, Aberdeen	19
Bishop Auckland—Court House, &c.	Durham County Council	W. Crozier, A.M.I.C.E., County Architect, Shire Hall, Durham	19
Loch Katrine—Reconstruction of Invergle House	Glasgow Corporation	J. M. Gale, 45, John-street, Glasgow	19
Weston-super-Mare—Extension of St. Saviour's Church .....	.....	S. J. Wildes & Fry, Architects, Boulevard Chambers, Weston-s-Mare	19
Leeds—Forcing Pits Foundations	Corporation	The City Engineer's Office, Municipal Buildings, Leeds	21
Perth—Villa	J. Boyd	David Smart, Architect, Perth	21
Stockport—Drying-Room, &c., Cattle Fair Ground	Sanitary Committee	J. Atkinson, A.M.I.C.E., Boro' Surveyor, St. Petersgate, Stockport	21
Highbate—Branch Public Library	Hornsey Urban District Council	E. J. Lovegrove, Surveyor, Southwood-lane, Highgate, N.	21
Cork—Repairs to Courthouses	County Council	John Geo. McCarthy, Secretary, Court House, Cork	21
Llandaff—Additions to Rookwood	Sir Edward S. Hill, K.C.B.	Geo. E. Halliday, F.R.I.B.A., Architect, 14, High-street, Cardiff	21
Walsden—Weaving Shed	Pioneer Mill Co.	J. Wood, Consulting Engineer, Bridge-street, Todmorden	21
Bradford—Workshops, Walker-court .....	.....	J. W. C. Atkinson, Architect, 1, Ivegate, Bradford	21
Twynedale—Pair of Semi-Detached Villas	David Hannah and Ivor Davies	J. Llewellyn Smith, Architect, Aberdare	22
Bowling Junction—Passenger Station	Lancashire and Yorkshire Ry. Co.	The Engineer's Office, Hunt's Bank, Manchester	22
Leeds—Repairs to Various Schools (One Year)	School Board	W. Packer, Clerk, School Board Office, Leeds	22
Branksome—Additions to Council Buildings, Shillitoe-road	Urban District Council	S. J. Newman, F.R.I.B.A., Branksome, Parkstone	22
Cornholme—Church	Rev. J. H. Lomax	C. Hodgson Fowler, F.S.A., Architect, The College, Durham	22
South Bank—Thirty-two Dwelling Houses .....	.....	O. O. Beadle, Redcar-road, South Bank	22
Halifax—Additions to Electricity Works	Tramways Committee	James Lord, C.E., Borough Engineer, Town Hall, Halifax	23
Manchester—Alterations to Baths, Leaf-street	Baths Committee	The City Surveyor, Town Hall, Manchester	23
Lancaster—Additions to Langley Park Infectious Hospital	Joint Hospital Board	Geo. Thos. Wilson, Architect, 121, Durham-road, Blackhill	23
Huddersfield—Shop and Houses, Spinkfield-road .....	.....	J. Berry, Architect, 9, Queen-street, Huddersfield	23
London, E.C.—Locomotive Sheds, &c.	East Indian Railway Co.	C. W. Young, Officiating Secretary, Nicholas-lane, E.C.	23
Surbiton—Mortuary	Urban District Council	Saml. Mather, A.M.I.C.E., Surveyor, Ewell-road, Surbiton	23
Rochdale—Baths	Baths Committee	S. S. Platt, Borough Surveyor, Town Hall, Rochdale	23
Plymouth—Extension of Electricity Works .....	.....	James Paton, Borough Engineer, Municipal Offices, Plymouth	24
Manchester—Extension of Shed at Southern Cemetery	Parks Committee	The City Surveyor, Town Hall, Manchester	24
Dewsbury—Baths	Corporation	C. Trevelyan Lee, Town Clerk, Town Hall, Dewsbury	24
Swansea—Warehouse at South Dock	Harbour Trustees	A. O. Schenk, M.I.C.E., Engineer, Harbour Offices, Swansea	24
Duness—Coastguard Buildings	Admiralty	The Director of Works Dept., 21, Northumberland-avenue, W.C.	25
Whitcham—Church Restoration .....	.....	Austin and Paley, Architects, Lancaster	25
Shillelagh—Labourers' Dwellings	Rural District Council	J. J. O. Ramsay, C.E., Shillelagh	25
Glasgow—Stobhill General Hospital	Parish Council	J. Thomson & R. D. Sandilands, Archts., 241, W. George-st., Glasgow	25
Coventry—Post Office	H.M. Commissioners of Works	The Secretary, H.M. Office of Works, Storey's Gate, S.W.	25
Preston—Classroom, St. Matthew's Schools	Admiralty	Thos. Nevett and Sons, Architects, 41, Fishergate, Preston	25
St. Mawes, Falmouth—Coastguard Buildings	East Sussex County Council	The Director of Works Dept., 21, Northumberland-avenue, W.C.	25
Bexhill—Sessions Court, &c. ....	.....	F. J. Wood, County Surveyor, County Hall, Lewes	25
Falkirk—Extension at Lodging House, East Bridge-street	Urban District Council	D. Ronald, Burgh Surveyor, Burgh Chambers, Falkirk	26
Briton Ferry—Public Library and Council Offices	County School	H. A. Clarke, Architect, Briton Ferry	26
St. David's, Pembrokehire—School Buildings	E. Binks	D. E. Thomas, Architect, Haverfordwest	26
Castleford—Business Premises, Carlton-street	School Board	Gareide and Pennington, Architects, Pontefract	26
Erith—Board Offices and Cookery Centre	Yorkshire Banking Co.	Ford, Son, and Burrows, Architects, 21, Aldermanbury, E.C.	28
Halifax—Thirty Houses, &c. ....	.....	Medley Hall, M.S.A., 29, Northgate, Halifax	29
Middlesbrough—Pulling Down Premises, Exchange-place	Town Council	Bedford and Kitson, Architects, Greek-street Chambers, Leeds	29
Sheffield—Destructor Buildings	Urban District Council	Charles F. Wike, C.E., City Surveyor, Town Hall, Sheffield	29
Croydon—Sewage Pumping Engine-House, Mitcham-road .....	.....	E. Mawdsley, Town Clerk, Town Hall, Croydon	29
Dartford—Fire Station	Metropolitan Asylums Board	W. Harston, Surveyor, High-street, Dartford	29
Tredegar, Mon.—Primitive Methodist Chapel, Commercial-road	School Board	W. S. Williams, Architect, Elmwood, Tredegar	30
Swanley—School .....	.....	Newman and Newman, Archts., 31, Tooley-st., London Bridge, S.E.	30
Southwick—Additions to Board School	Urban District Council	Clayton and Black, Architects, 152, North-street, Brighton	30
Llandudno—Alterations to Montpelier Hotel	School Board	T. B. Farrington, A.M.I.C.E., Trinity-square, Llandudno	31
Sandgate—Stores, &c., North-lane Yard .....	.....	A. R. Bowles, A.M.I.C.E., Surveyor, Sandgate	31
Kingsbridge—Board Schools	Corporation	T. W. Latham, Architect, Kingsbridge	31
Huntingdon—Mortuary, &c.	Cuckfield Rural District Council	The Borough Surveyor, High-street, Huntingdon	Feb. 1
Burgess Hill, Sussex—Isolation Hospital	Electric Light Committee	G. T. Hine, Architect, 35, Parliament-street, Westminster, S.W.	4
Eastbourne—Electric Lighting Station .....	.....	R. M. Gloyne, A.M.I.C.E., Boro' Engineer, Town Hall, Eastbourne	4
Spittlegate—Sunday Schools and Caretaker's Cottage .....	.....	G. Camplin, Surveyor, 11, Elmer-street, Grantham	5
Die Carr, Darlington—Two Schools .....	.....	G. Gordon Hoskins, F.R.I.B.A., Court Chambers, Darlington	5
Aldershot—Ward Block, &c., at Sanatorium	Urban District Council	Nelson F. Dennis, Surveyor, Aldershot	5
Chelsea, S.W.—Children's Home, Milman-street	St. George's (Hanover-sq.) Guardians	Edwin T. Hall, F.R.I.B.A., 67, Moorgate-street, E.C.	11
Whitby—Electric Light Station	Urban District Council	Wm. Seaton Gray, Clerk, Council Offices, Whitby, Yorks.	12
Holloway, N.—Tanks and Additions to Elec. Lighting Station	Islington Borough Council	A. Hessel Tiltman, F.R.I.B.A., 81, Russell-square, W.C.	12
Stratton St. Margaret—Infirmary, &c.	Swindon and Highworth Guardians	R. J. Bewick, M.S.A., Architect, 35, Regent-street, Swindon	25
Manchester—Additions to Headquarters, Ardwick Green	Artillery	John Eaton, Sons, and Cantrell, Architects, Ashton-under-Lyne .....	.....
Milford Haven—Ice Factory	Freeman, Son, and Gaskell, Architects, Albert Chambers, Hull
Churwell, Yorks—Mission-Room, &c.	R. Castle and Son, Architects, Cleckheaton

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NEW FACTIONS AND DEVELOPMENTS.

SINCE the sixties of the century just closed, many new watchwords and thoughts have stirred art. We might broadly call in review the Historic or Academic period when Classic and Gothic reigned, to the suppression of all mental or intellectual influences; it was an age of purism in style. Next followed an outbreak of what has been called "Muscular" architecture, in which the principles of construction violently asserted themselves, when many extraordinary buildings were erected, strong in their assertion of arches and timber-framed roofs, though conceived more as a vigorous protest against the former school. Next we have the period in which Street, Burges, Sedding, and others adopted a more rational following of Mediaeval art—a recognition of the beauty of the forms of all periods, even the Earlier and Later phases which hitherto had been neglected as crude or impure; in fact a reaction from the purism and correct detail adopted by Sir Gilbert Scott and his school. Then we have had the Continental revival, which still exists, ushered in by the writings and illustrations of Ruskin, Street, Nesfield, and others, when Venetian Gothic and French Gothic, and the mixed styles of Italy, Spain, and Germany were largely introduced. To these succeeded the school largely introduced by Norman Shaw, which still lingers with other variations of the Renaissance. That these schools have influenced our architecture in various ways cannot be doubted. During the earlier periods architects were grounded in academic, archaeological, and chronological and geometrical principles; they have made us accurate in our study of historical styles, while the later schools have inculcated the truer principles of Classic and Gothic art, and have given us broader sympathies for all art that is beautiful and appropriate. Recently the revolt against styles has led some of our younger men to a "new manner," in which it is obvious that there is a protest against all convention and ornament. The forms and details of style are according to this school inadequate to express modern wants, and its disciples affect a styleless simplicity in their work. We see the result of this revolt against style in many buildings which the revival of craftsmanship has rather encouraged, as in many examples of domestic buildings, both in the country and in the Metropolis, in which extreme simplicity and the unconventional use of certain features are observed. As Professor Pite has pointed out, Mr. Philip Webb's houses in Lincoln's Inn Fields and Kensington Palace Gardens are examples of direct expression of design in the true spirit of building craftsmanship, as noticed in the brickwork and masonry. The draughtsman's conventions are absent altogether; in fact, Mr. Webb does not study his work from a draughtsman's point of view, but from that of the craftsman. Mr. C. R. Ashbee also has shown the same return to simplicity. With this new cult of craftsmanship, the relation of the bricklayers, mason's, or carpenter's business to the design is paramount, though at present the enthusiasm of the architect is not shared by the workmen. Under the modern contracting system, when so much brickwork or masonry is required measured by the rod or cube foot, it is hardly possible to expect any sympathy between the architect and the crafts. Still, there are manifestations of an interest

on the part of the workmen, if only the architect will indicate the way, to do which his designs must be such that they can be executed without any violence to traditional methods, and with a true appreciation of the technical methods used. Any attempt to get the workman to do something that he is not used to do, or contrary to the methods of the craft, will be a failure.

But the revolt against the conventional has unfortunately been accompanied, in one direction at least, by a rejection of all that is modern and natural. We have seen designs where the authors have gone out of their way to exaggerate irregularities, to magnify differences and crudities, even at the cost of doing something contrary to custom; and if we are to take these seriously, the efforts made have defeated the purpose, and brought the works of able men into ridicule. There is one phase of this movement which seems to people of common sense and judgment to be contradictory to the principles of the authors themselves. We speak of designs by a few advanced men in which the sentimental and picturesque overpower the sense of appropriateness to modern wants. Houses and gabled fronts may be seen that, but for their freshness, might be mistaken for erections at least a hundred years old. Fronts to dingy London streets with old-fashioned narrow gauged-arch windows with small panes, stuccoed gables, close-cut verges, appear inconsistent with modern surroundings, especially when the affectation of age and accident goes so far as to follow the lines of rain-water pipes on the façades. These fronts imitate more correctly the backs of Old London houses. Our readers will be able to recall many such examples of house-building. How far these designs can be reconciled to the principles professed—namely, the rejection of tradition and conventional arrangements—is doubtful. We can understand and appreciate the tenderness and sympathy for old and picturesque houses of the 18th century; but let such work go under its proper name. When it is natural and honest, as it might be in a country town, there is little objection to follow the plain and unsophisticated methods used by country craftsmen; but the intention of imitating a country house front in a London street or river terrace is carrying a hobby a little too far. The revolt against mere style is quite understandable, as against those repetitions and conventions, into which men fall after a century of imitation. Revivals have made them forget what honest expression is.

The vice of eccentricity is another of the evils that attend all reformations. Religious reformations have always produced their crop of fanatics, violent rebels against tradition, and art reformations invariably create another kind of fanatic, the inventors of new styles, and art egotists. These men delight in eccentricities of style. Some of these are exhibited in the Soane Medallion Student-ship design, as those under the mottoes "Thor" and "Melba." In the former of these the author has discarded conventional rules; rigid thick-lined vertical piers are used without much reference to the character of a city clubhouse or to any expression of urbanity, apparently for the sake of doing something strong and original. The author of the latter design is equally indifferent to the conventional treatment of a Classic façade in associating columnar wings with a simple centre gable of a poor domestic type. These eccentric productions show a disregard of the proprieties of traditional building, and assume (through the ignorance of the public) that all previous rules of art have been wrong. Between these two extremes we have the quiet and unostentatious work of men who have a mission to carry out; who are trying to promote by reasonable means those convictions of honest craftsmanship which have too

long remained suppressed under the conventions of mere style and academicism. These men have never shaken off the allegiance to the traditional principles of art, but have tried to reinfuse into them the germ of a new life. They have revolted against style because of its meaningless use as a dead language, and the affectation of forms that have been so oppressive. They have allied themselves with the intelligent art craftsman. By these workers the thoroughness of the old work is often valued more completely and intellectually than by those of the historic school, and they are anxious to bring about the conditions that favour the intuitive workman-artist. But as we have seen, like all new movements, there is a strong tendency to break up into factions and cults, and it is against this danger—the one-man cult—that we have to be on our guard.

There are now many openings for the new architectural movement. That it has largely affected our domestic buildings we have ample evidence. The work of architects like Norman Shaw, Ernest George, Ashbee, Baillie-Scott, and many more is convincing evidence of the reaction from commonplace convention in the design of our buildings, in the treatment of our entrance halls, and our rooms. A few years ago our houses were made the hunting ground of Tudor and Stuart ideas, art furniture tradesmen, and *bric-a-brac* dealers. Every available wall space and corner was crowded with brackets and hanging-shelves. The chimney-pieces were cusped, crocketed, and carved, the ceilings richly panelled, and the doors and furniture uncomfortably ornamented with bosses and stop-chimferings. A wave of reaction has set in; from over-ornament there is now a desire for rigid simplicity of line amounting in some instances to primitive crudity or extreme quietness in the woodwork and details of the interior. In the best work we see this quietness and repose accompanied by a studied regard to convenience and comfort in every detail, a refinement in the contour of mouldings and balusters, delicacy of carving, ornament, if any, in low relief and harmony of colour. On the other hand, this taste for quietness and breadth often lapses into eccentricity and bareness, ugly mouldings and offensive archaicism. In the design of our new churches a good deal of the latter spirit is shown. Breadth and simplicity and a grandeur of conception may be seen in not a few designs for churches, a taste due to men like Selding, Bodley, Bentley, Leonard Stokes, and others, and this taste has come happily at a time when inexpensive mission churches are required, and artists are again turning their attention to mosaic and fresco decoration on large wall surfaces. There is another direction in which this architectural movement may be happily employed: it is in the dwellings for the working classes, where a simple architectural expression of the problem is required. Hitherto we have had a good deal of ugly conventionalism of a bare and forbidding kind for buildings of this description;—huge blocks in their ugly baldness being erected in our crowded cities and suburbs. If anywhere honest craftsmanship directed by an art instinct is needed it is in dwellings for the working man where the plain, unsophisticated treatment of which we have spoken can be employed with the best result. Here we have the opportunity of disposing rooms in groups of two, three, four, or more for families in the most telling way, and of covering them with roofs of the simplest form. The common staircases or common laundry and conveniences that may be required can be turned into a feature. One or two attempts of some merit have been made, and we point to the Boundary-street scheme of dwellings as an example. But if the architects of this school were to devote themselves to buildings where the external expression or elevation had to be evolved simply from

plan, without any regard to conventional types or details, they would be practically illustrating their principles in the best and most useful way. This valuable movement has been somewhat discredited by the attempts of its followers to introduce in the most obtrusive manner forms and anachronisms of a previous age, or to obtrude in buildings of some pretensions principles of design that completely shock the ordinary tastes of the day. We are not sure that a complete casting-off of all conventions is the best way to proceed. These sudden changes produce irritation and reaction. We are more hopeful that a less assertive revolt against authority and historical precedent, such as we see in the work of many of our leading architects, will prevail. In the new development all modern materials and methods must receive careful attention. Iron and steel and other intractable materials will have to find a place, and even those methods of construction that give pain to the sensitive artist—fire-proof construction in its many forms, and other exigent appliances—will have to be dealt with. Is there any realisation of this amongst those who have cast off the habiliments and traditions of the present schools? We wait for new buildings designed on the modern principles to give us the answer. The glamour of clever draughtsmanship is strong. We shall not have robust or commonsense work till the mode of selecting designs is changed; till it is thought quite as great a merit to work out with the aid of a few diagrams or sketches an honest and straightforward plan or piece of construction as to make attractive drawings and perspectives. Draughtsmanship has been put before design or thought to a degree that has discouraged the practical and artistic minds in the profession; and we do not mean by this word skilful drawing or sketching, but the business of making and colouring perspective and other drawings of buildings by men who know little or nothing of construction.

The influence of professional education and examination in architecture has been felt. Classes and examinations have tended to advance the study of historic and academic architecture and to break down barriers of styles and individual tastes. Courses of architectural lectures have acted as a sort of counterweight to the teaching of the modern school; but to what extent they have discouraged an honest independence in art is questionable. Those who come under the influence of class teaching are young and impressionable, and have had little opportunity of drawing conclusions for themselves, so that in many instances the result will be to curb the enthusiasm of some men that otherwise would have joined the ranks of the advanced school. One writer has said that the examinations "are a contrivance for natching out incorrigible five-percenters," and we are afraid there may be truth in the remark. The dunning into the student's head of formulae, tables of weights of brick, stone, pipes, &c., and a variety of conventions and traditional types and rules of architecture is hardly the best way to develop the faculty for composing buildings, or to produce a class of men capable of grasping in an art sense the modern problems of construction.

THE HOUSING PROBLEM.

DISAPPOINTMENT is sometimes expressed at the little attention given by our Metropolitan authorities to the housing of the working classes. It is true that the work undertaken has not kept pace with the enormous increase of population; but this is to be attributed, not to the inadequacy of work actually accomplished, but to the failure of a good deal of it, and to

a misunderstanding of the problem. The account lately published of the housing work done by the late Metropolitan Board of Works and the London County Council from the year 1855 to the end of the century just closed, prepared under the direction of Mr. C. J. Stewart, late Clerk of the Council, to an order of the Housing of the Working Classes Committee, is of interest and instruction.* Until the year 1851 the Legislature does not appear from this report to have concerned itself, in any way with the kind or number of houses provided in London for the working classes, and to the Earl of Shaftesbury, perhaps, we must give the credit of being one of the first to direct the attention of the House of Commons to the then disgraceful condition of the dwellings inhabited by the labouring class in this country. The Earl brought in the Labouring Classes Lodging Houses Act of 1851, and this was amended by the Common Lodging Houses Act, 1853, which provided against improper persons being registered as keepers of such houses. The administration of these Acts is now transferred to the London County Council. The series of Acts known as the "Torrens" Acts was commenced in 1868, which compelled the owners to maintain their houses in proper condition. Then the Artisan and Labourers' Dwellings Improvement Act of 1875 came into force, known as Cross's Act, which dealt with whole areas when the houses were structurally defective, and called for demolition and reconstruction. These Acts paved the way for future legislation. Up to 1889 the old Board disposed of sites to companies, who were compelled to erect houses for the working classes. Since then the Council have undertaken themselves to erect, let, and maintain the dwellings. The Council has thus secured an asset by the provision of a sinking fund providing for the repayment of the outlay within 60 years. Mr. Stewart, in his preface, says that the Council has provided dwellings for 32,000 persons, the total cost of which is £2,930,000, nearly half of which has been expended in clearing unhealthy areas. The cost is, therefore, £53 per head. These facts show the large amount of demolition and rebuilding done by the Council.

It would be impossible to follow even briefly the steps taken in the housing question in London as furnished in this work. Torrens' and Cross's Acts and the amendments made to them in 1879 facilitated the action of the old Board in respect of compensation to be awarded according to their value. One of the main things secured was that any premises that were pronounced unhealthy or overcrowded, or otherwise unfit, were to be assessed for compensation after the estimated expense of making them healthy. But little appears to have been done under these Acts, owing to the trouble and cost of procedure, and a select committee in 1882 sat to consider further amendments that would tend to stimulate action on the part of authorities who had to administer the Acts. The result was the Artisans' Dwellings Act, 1882, which amended both the preceding Acts. Besides simplifying procedure in arbitration, it gave the power to the authorities under Torrens' Act to purchase any building which obstructed ventilation, or prevented from rendering healthy any other building—a very valuable point in itself, but which was found inoperative in many instances. A Royal Commission was appointed in 1884 to inquire into the whole matter. They found that the evils of overcrowding were becoming more serious, despite the legislation, mainly owing to the fact that the provisions were not enforced; and they pointed out the dif-

ferent principles upon which Torrens' and Cross's Acts proceed. The result of this Commission was the passing of the Housing of the Working Classes Act, 1885, which extended the Lodging Houses Acts, and in London substituted the Metropolitan Board for the vestries and district boards. The excessive cost of schemes; the obligation to supply dwellings for displaced people within the same area; the difficulty in getting rid of the cleared areas, subject to the obligation to build working-class dwellings; the inability of the authorities to compel the owner under Torrens' Acts to do more than to repair or reconstruct upon the old foundations insanitary dwellings, and therefore their powerlessness to prevent overcrowding, were all difficulties which the earlier Acts had to contend against, and impeded their action. These difficulties are very succinctly and fully stated in the report to which we refer (pp. 17-45). The sites of Millbank and Coldbath Fields were acquired under the Act of 1885. After this Act the new Metropolitan body the London County Council came into being, and the housing question was taken up. The Housing of the Working Classes Act, 1890, was the result of amendments, and consolidated the previous Acts. The provisions of the Act are known to many of our readers. If on official representation an area is found insanitary, the Council may prepare a scheme for its improvement, or open out the area for ventilation. The scheme must provide accommodation for the number of persons displaced within the limits of the area or vicinity. After the provisional order confirming the scheme is issued, subject to the approval of the Secretary of State, the Council can proceed to execute it. They may erect dwellings with his consent; but these must be sold at the expiration of ten years, unless otherwise determined. The other parts of the Act mainly consolidate previous Acts.

Then we have the Public Health (London) Act, 1891, pretty well known, the Housing of the Working Classes Act, 1894, which completes the existing legislation on this matter in London. In the working of these Acts, the question of compensation has always been a serious one. The owners of unhealthy dwellings have allowed them to fall into a discreditable state, unfit for human habitation, and it is preposterous that such owners should be compensated upon a scale almost equal to that applied to sanitary property. The cost of rendering such insanitary property fit for habitation should be deducted from the value of property in its existing state; if the dwellings are so bad that they cannot be rendered fit, then on the basis of value of the site cleared of buildings added to the value of the materials on the ground. These were the principles which the old Board of Works advised as the basis of compensation. As to providing for the rehousing of the displaced tenants, the Board proposed to clear the areas for commercial purposes, and to provide new dwellings on sites to be approved. The new Council suggested several amendments of law which were embodied in the Housing of the Working Classes Act, 1890, we have referred to. The difficulty of disposing of the cleared areas was considerable, and the Council have since erected buildings themselves, the rents charged for the dwellings erected not exceeding those in the neighbourhood. The limitation of height to four stories, and a minimum size of living-rooms of 144sq.ft., and for bedrooms of 96sq.ft., and other regulations were adopted; but the regulation as to height has been modified, so as to allow five-storied dwellings, and a height of 8ft. 6in. for rooms allowed. In 1897 rooms were increased in size, and the standards adopted were: for living-rooms 160sq.ft., for a bedroom 110sq.ft., or, where there were two bedrooms, 100sq.ft. and 120sq.ft. respectively.

* The Housing Question in London: prepared under the direction of C. J. STEWART, Clerk of the Council. London: P. S. King and Sons, Great Smith-street, Westminster.

The provision of a 45° angle of light to all habitable rooms. But the demand for lower rents has compelled the Council to revert to the minimum size of rooms just given. During the last few years, indeed, the views as to the size of rooms, through-ventilation, balconies, staircases, disconnection, and open lobbies, have undergone modification. Again, staircases direct from kitchen to bedrooms were condemned by the Local Government Board; open staircases were favoured, and self-contained tenements have been in demand; but we cannot here discuss all these structural points and modifications.

What has all this legislation accomplished? The sections of the report which follow describe the several schemes undertaken and completed by the late Board and London County Council under the several Acts. These are detailed, and plans of each scheme given. We will simply here refer to the more important schemes undertaken by the Council under Parts I., II., and III. of the Housing of the Working Classes Act, 1890. The first of these was the clearance of the area known as the Boundary-street Scheme, which was bounded on the north by Virginia-street, on the west by Boundary-street and High-street, and on the south by Church-street—full of narrow streets and courts. This clearance displaced 5,719 persons of the working class. This scheme and the dwellings erected have been so recently described that we now only refer to a few facts. The area was cleared by sections, including laying out roads for each and completing the dwellings thereon before clearing the next block. Five sections were ultimately decided upon, and it was determined to provide for 4,600 persons on the total cleared area. The plan of the new scheme was ingenious, and more attractive than originally intended. It was a system of radiating streets from a central open space or ornamental garden. The buildings were block buildings three, four, and five stories in height. Those fronting the avenue from Shoreditch High-street to the garden were proposed to have shops on the ground floor, and 58 workshops, and 200 costermongers' sheds. Workshops have been built at the rear of Sunbury and Cleeve Buildings, and sites are given for church, School Board buildings, factory, and a central laundry was designed, with waiting-room and 42 washing-stalls, each with hot and cold supply and boiling compartment, fed by steam; at end of each range was a hydro-extractor and mangle, driven by steam, and drying-houses with hot-air provision. Four slipper-baths for women and twelve for men were provided in an annexe. It was estimated that a capital expenditure of £13,125 would be saved by non-provision of laundry accommodation in the blocks, and this sum represented an annual charge of £700, equal to 1½d. per week per room on the tenements, so that the tenants gained by the central laundry, after deducting the charge for its use, to the extent of ¾d. per week per room. The laundry was eventually carried out at a cost of £5,890. The plans of some of the blocks are given. Cleeve Buildings contain thirty-two tenements, comprising seven two-roomed, twelve three-roomed, twelve four-roomed, and one five-roomed, and in the rear sixteen workshops are built. The rents vary from 6s. 6d. to 13s. per week. Each floor has hot and cold supply. Workshops in the rear are let at 4s. per week each. There are eight shops facing Calvert-street, let at from 12s. to 20s. per week. There are private w.c.'s; but the sculleries are on each floor in common.

The Culham Buildings show a class of tenements of less rent. Fifteen one-roomed and twenty two-roomed; the sculleries and closets are in common; the rents 3s. 6d. to 5s. 6d. per week. The Sonning Buildings give tenements of two, three, and four rooms,

the rents varying from 5s. 6d. to 10s. per week.

Marlow and Shiplake buildings provide shops on the ground floor, workshops in the rear; the tenements are self-contained, thus:—Shiplake Buildings have 26 tenements, chiefly four rooms; the rents in Marlow Buildings are from 9s. 6d. to 13s. per week, and those in Shiplake Buildings 12s. to 14s. 6d. per week. Henley and Walton Buildings contain three and two-roomed tenements, and the rents vary from 6s. to 8s. 6d. per week. Taplow, Sunbury, and Chertsey buildings contain tenements of two, three, four, and several are self-contained; rents vary from 6s. to 10s. (The accommodation altogether is for 5,524 persons, giving two persons per room.) With the exception of 35 tenements, each has a private w.c. There are 23 separate blocks in the area, and the living-rooms average 144sq.ft., and bedrooms 96sq.ft. In later buildings the sizes were increased to 160sq.ft. for living-rooms, and 110sq.ft. for bedrooms, these being average areas. Every habitable room on the area has a 45° angle of light horizontally and vertically, and nearly all the rooms command a pleasant outlook. The main streets are 50ft. wide, and the central garden 60ft. There are 601 tenements entirely self-contained, and 201 self-contained, with detached private w.c., 90 tenements having private w.c. and scullery outside, 142 tenements with sculleries in common, and 35 tenements using both in common. The London Churchway (St. Pancras) Improvement Scheme comprises the whole of Somers Town: a damp and unhealthy area. The dwellings in Wellesley Buildings will give accommodation for 360 persons—60 tenements of two and 20 tenements of three rooms. Plans of the buildings for this block have, we believe, been approved, and the erection commenced. Next we come to the Clare Market-Strand Improvement Scheme (1895): a densely-populated and insanitary area between the Strand and Sardinia-street, dealt with under Part I. of the Housing of the Working Classes Act. There are three areas of about 3½ acres, and include houses in Drury-lane, Stanhope-street, New Church-court, Blackmoor-street, Holles-street, Clare Market, &c., a number of narrow alleys, some *culs de sac*, and much overcrowding, representing over 800 persons to the acre. The area between Stanhope-street and Drury-lane and Kemble-street is very dense. Considerable demolition has already been made near the Strand in connection with the Holborn-to-the-Strand improvement. Upwards of 3,000 persons will have to be rehoused, in addition to 750 to be rehoused on the area and 1,550 on the Millbank estate. Other schemes include the Garden-row area (St. Luke's), 1899, including several areas packed with small dwellings, and without yards, badly ventilated and dilapidated. The Robey-street area is of the worst kind, and the persons displaced have to be rehoused; the Webber-row scheme, Southwark; the Aylesbury-place, Clerkenwell, and Union-buildings improvement scheme; Burford's-court scheme; Nightingale-street, Marylebone, scheme; Mill-lane Deptford, scheme; Ann-street, Poplar scheme; and other schemes for Falcon-court, Borough, Chapel-grove, &c. Under Part III. of the same Act dwellings for costermongers have been erected in St. Luke's (Dufferin-street Dwellings), Municipal Lodging Houses, Parker-street, Drury-lane, plans of which are given, and various sites have been acquired. The Millbank Estate, Westminster (the Millbank Prison site), was purchased by the Council for £2,500 per acre, and buildings named after British artists have been erected. The Hogarth Buildings were occupied in May, 1899, and comprise 54 tenements of two, three, four, and five rooms. Twenty-four tenements are self-

contained, the rents ranging from 7s. to 13s. per week. The Leighton and Millais buildings, of three and two rooms, were completed in 1898, and the Romney, Rossetti, Turner, and Ruskin buildings completed in 1899. These provide tenements of two, three, and four rooms. Ten other blocks from Messrs. Spalding and Cross's designs, named after Gainsborough, Reynolds, and other painters, have been commenced. The plans of these buildings show a superior class of dwellings. Other sites have been acquired by the Council to provide for persons displaced in the Clare Market and other schemes, and the report furnishes a description of these. From the facts and data given, some idea of the vast labour and cost expended on the rehousing question may be gained, and of the progress made in eliminating errors inherent in the earlier attempts.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE sixth ordinary meeting for the present session of the Institute of Architects was held on Monday evening, and was largely attended. The President, Mr. William Emerson, occupied the chair. Mr. Alexander Graham, F.S.A., Hon. Secretary, announced the decease, at the advanced age of 87 years, of Mr. John Burnet, of Glasgow, who had been a Fellow since 1876. Mr. Burnet's works would, he added, take high rank among those executed by Scottish architects, and fortunately they would be continued by his son and successor, Mr. James J. Burnet, A.R.S.A., who was very frequently present at their meetings, and had served upon their Council. A vote of condolence with the family was agreed to in silence.

THE INSTITUTE PRIZES AND STUDENTSHIPS.

Mr. W. J. Locke, Secretary, read the awards of the Council in these * competitions, and opened the sealed envelopes containing the names of the competitors. The awards were as follows:—

Institute Silver Medal and Twenty-five Guineas for Essays Subject: Comparative Desirability of the Formal or Irregular Treatment of Street Architecture in Large Cities. "Modus in Rebus," Arthur Marion Watson, B.A.A., Nottingham-place, W.; Hon. Mention, "Per Ardua," William Curtis Green, 63, Bedford-gardens, Camden Hill, W. Three competitors.

Institute Silver Medal and Ten Guineas for Measured Drawings. "Stafford Knot" (delineations of Kirby Hall), Lawrence Lee Bright, 9, St. Peter's Church-walk, Nottingham; Medal of Merit and Five Guineas, "Archer" (St. John's Church, Westminster), A. Wyatt Papworth, 10, Park-place Villas, Maida Vale, W.; Medal of Merit and Five Guineas, "Cannon" (Barghley House by Stamford Town), Harry Thomas Traylen, 15, Broad-street, Stamford. Eight competitors.

Soane Medal and £100 (Design for Clubhouse): Not awarded. Three special prizes of thirty guineas each to "Ars," Matthew James Dawson, 37, Ossington-street, Baywater, W.; to "Hiawatha," H. Munro Cantley, Westerfield Rectory, near Ipswich; and to "Ionia," J. Fulton, 10, Rothwell-street, London, N.W. Twenty-two competitors.

Owen Jones Studentship: Certificate and £100, Hervey Rutherford. Medal of Merit, Ramsay Traquair. Certificate of Merit, E. Bennett. Six competitors.

Pugin Studentship: Silver Medal and £40, Henry Cotman. Medal of Merit, J. Forbes-Smith. Certificate of Merit, A. J. Pitcher. Nine competitors.

Godwin Bursary: Silver Medal and £40. Not awarded. Only one competitor.

Tite Prize: Certificate and £30, for Travel in Italy, "Corona," William Fairbairn, 9, Spencer-street, Edinburgh. Second, Ten Guineas, "St. George," Ralph Knott, 66, Oakley-street, Chelsea, S.W. Hon. Mention, "Marble Arch," William Arthur Mellon, Odsey Grange, Ashwell, Herts. Twenty-six competitors.

Grissell Gold Medal and Ten Guineas. (Design for a Timber Footbridge across a Stream. "Pons Asinorum," James Edwin Forbes, 17, Buckingham-street, Strand, W.C. Eighteen competitors.

Asphodel Prize of Books, value £10, to Student who most highly distinguished himself in the Final Examinations held during 1900. Shirley Harrison, 7, St. Martin's East, Leicester. Extra prizes, value Five Guineas each, to C. H. Fitzwilliam Comyn, 29, Trebovir-road, Earl's Court, S.W., and Chas. E. Vardell, 296, Vauxhall Bridge-road, S.W.

The designs and reports submitted by James McLachlan, Pugin Student, 1900; by Percy E. Nobbs, Tite Prizeman, 1900; and by John Stewart, Owen Jones Student, 1900, have been received and approved by the Council.

DIFFICULTIES AND HURDLES IN PRODUCING GOOD MODERN ARCHITECTURE.

Mr. J. J. STEVENSON, F.S.A., read a paper on this subject. He observed that the difficulties besetting modern architects were due to

* A review of the drawings and designs submitted was given in our last issue, p. 7.

he conditions of modern life as compared with those of former times. The hindrances were the laws and regulations which restrict practice and the natural development of building. Traditional architecture did not cease with the new life of the Renaissance, and though the Mediæval styles lived on, the new architecture soon became a custom and tradition which every workman knew, and could carry out without drawings from an architect. It is only in the last two or three generations that architecture has emancipated itself from tradition; that builders and architects, instead of conforming to established custom, have followed their own fancies, and have done what was right in their own eyes, every man being a law to himself. Instead of the few whose force of genius broke through tradition and made an advance in the style, each architect and builder now thinks he must be original, and as original genius is scarce, so are good buildings. The best hope for new architecture is a thorough knowledge of the old, not a superficial acquaintance with many different styles. The style must be assimilated so that the architect can think in it and use it as he does in his native tongue.

COMPETITIONS: THEIR LAIS AND AMENDMENT.

It might be thought that competitions, with an architect of standing as assessor or as judge, would secure good architecture by criticism and selection of the best designs. But the result has not justified the hope, and there is now a tendency to abandon the system. In a competition the architect works in the dark; he has to guess what is wanted, and no information the assessor can give in his instructions to competitors can adequately supply it. Architects whose local standing might have entitled them to be appointed for the work, who possibly know more of the conditions and requirements than the assessor, hesitate to be judged by their drawings alone in competition with some young unknown architect from a distance who, if he is successful, has no character to maintain in the district. Sometimes the assessor is one whom architects may fairly decline to be judged by. They may know that he does not understand their art, and his instructions may show that he is ignorant of the requirements. In these he takes a power of decision more absolute than judges in law cases ever claim; they decide only after hearing both sides of the case, and they give reasons for their judgment. But the assessor hears no pleadings and gives no reasons for his judgment. Might not his proceedings be in some degree assimilated to those customary in law cases? The competitors, having studied for months the problems involved, would be able to point out to him how far their plans had solved them, and where their opponents had failed. It is possible that, however fair and able, the assessor may have missed them; they should not be condemned unheard. As to the objection that the assessor would thus know who the competitors were, and might be influenced to give the award to a favourite or a friend, such a suspicion amounts to a libel on the assessor's character. It would be more dignified for the assessor to declare himself incapable of such action by making the decision knowing who the authors were. It might prevent his overlooking merits in the plans of architects whose character and reputation and the work they had done are a guarantee that they could be trusted to carry out the work. By refusing to know the competitors, the assessor neglects what is a far more important consideration in the selection of an architect than making competition drawings. The faculty of winning competitions is often not a gift of the best architects. The selection of the assessor is the most important factor for the fairness of a competition. Why should not the competitors appoint him by their votes? It would give a better guarantee that they could trust him to understand and appreciate their designs, and if the majority appointed one whom they thought unlikely to do so, they would be able to withdraw before wasting their time and risking their reputation. There would be a better chance of just decision if there was more than one judge, as in important cases in the Law Courts. Opinions vary as to what constitutes good architecture; different views of what designs are best may honestly be held. A judge may see fit to alter his opinion on the representations of his colleagues. As regards the labour and money risked by competitors, there should be a stipulation that architects invited to compete should each be paid a sum towards their outlay. Com-

petitions, wisely conducted, might advance the art and produce good buildings. They should be made such that other architects than those who usually gain them would not hesitate to engage in them; that work done as well as the accidents of competition drawings should be an element in decision; that the judges should have the confidence of the competitors for their appreciation of art in architecture in the various developments now prevalent.

HAMPERING BUILDING REGULATIONS.

In considering the hindrances in producing good architecture the author referred to the modern rules and regulations by which the designs of buildings are hampered and restricted. These have generally been devised by doctors and sanitary experts for excellent and necessary objects. But instead of availing themselves of the knowledge and experience of architects, they devise crude and often tyrannical rules without adequate knowledge of building construction, and without thought as to the architectural appearance or the cost of their requirements. The London Building Act, 1894, would have been a far more effective measure had the London County Council arranged with a body of architects such as the Institute, the provisions for insuring the necessary requirements, and the £20,000 Parliamentary expenses would have been saved. The Local Government Board's Model By-laws ignored local modes of building, and reduced houses all over the country to a uniform level of dullness. The recent Police Act for Scotland, to insure ventilation, decreed that ground-floor ceilings should be 9ft. 6in. high and bedrooms 9ft. But this did not insure ventilation; it rather provided space for vitiated air to accumulate. Such regulations spoiled cottage architecture, made buildings needlessly costly—indeed, prevented cottages being built. Equally foolish and costly is the regulation that every sleeping-room over 100ft. area should have a fireplace and flue, though it would probably never have a fire in it, and would most likely be stopped up with a smoke-board. Why forbid half-timber construction? It is a most charming development of Old English architecture, and houses so built have lasted for hundreds of years. It gives beauty to landscape, and the risk of fire is insignificant in isolated cottages. The precautions against fire are needlessly oppressive for low or isolated houses. Carrying the party-walls above the roofs in ranges of low houses spoils their appearance, and is unnecessary if the slates are bedded on the walls. In some rural by-laws the needlessly tyrannical provision that all wood-work should be kept back 4½in. from the face of the wall has been revived after it had been removed from the new London Act. Another needless regulation, showing ignorance of building construction, is that compelling footings to be put to walls beside concrete foundations, which are perfectly stable without them. In conclusion, the author urged the Institute to press upon the authorities the acceptance of by-laws insuring sanitation, ventilation, fire prevention, and stability, but drawn with common sense and knowledge of building, and which would not hamper and ruin architecture and cause needless cost.

DISCUSSION.

Mr. WILLIAM WOODWARD said he was disappointed with the tenor and tone of the paper. There were many members of the Institute who took a special delight in expressing cheap criticism on two distinguished men of the day—Lord Grimthorpe (laughter and derisive cries) and Sir William Richmond (renewed cries of Oh, Oh!) Lord Grimthorpe was regarded as a splendid butt for criticism, especially in reference to his work at St. Alban's Abbey. He had always maintained that the attacks on that west front were unjustified, and that when it had been toned down by time ("How long?") it would be deemed to be satisfactory in effect. This much was certain, that if the front had dated from the thirteenth century ("Fourteenth century") instead of the nineteenth, the Institute would have been overwhelmed with intense admiration for its cleverness. He would not refer to the transepts (Renewed laughter and applause) because he could not honestly congratulate Lord Grimthorpe on his work there. He hoped they would not treat the life work of the other man he had mentioned, Professor Richmond, with the same levity. He should like to ask Mr. Stevenson whether the gilded iron railing to the Whispering

Gallery of St. Paul's, to which he had so strongly objected, was the initiatory work of Sir William Richmond, or of the surveyor to the cathedral, who was a prominent member of that Institute?

Mr. STEVENSON, with much warmth, said all this hostile criticism was a great waste of time; he had only incidentally alluded to the gilded railings, and the question of their designer did not affect his main arguments. He objected to Mr. Woodward's remarks.

Mr. WOODWARD retorted that the President was the chairman of that meeting, and could alone determine whether or not his remarks were in order. If a member read a paper before the Institute, he must expect to be criticised. With the second part of Mr. Stevenson's paper he was more in agreement. He thought, with the lecturer, that the L.C.C. building regulations were too stringent, and hampered architects in their design. Unfortunately, they were bound to submit to the absurdities enforced by the district surveyors, for if architects appealed they found that the County Council protected their officials. The prohibition of windows being set within 4½in. of the front was, however, removed from the present building Act.

Mr. LACY W. RIDGE wished to propose a hearty vote of thanks to Mr. Stevenson for his excellent paper. He was especially glad to hear him denounce the tyrannical building regulations enforced in London, and still more those operating in rural districts. Last year a deputation waited on the Local Government Board and endeavoured to convince the officials that the by-laws in rural districts were unnecessarily stringent. The then Parliamentary Under-Secretary, Mr. T. W. Russell, paid some attention to the matter, and promised to give it consideration; but since then he had been succeeded by another, and they would again have to memorialise the Board. It was useless attempting to influence the permanent officials.

Mr. JOHN SLATER seconded the vote of thanks. As to competitions, one improvement would be to appoint an assessor, who should select to compete a limited number of architects, all of whom should be paid for their trouble. There could be no reason why competitors' names should be withheld from the assessor. The building regulations of London were needlessly restrictive. He believed no district surveyor could explain why a bay window might not be carried up more than three stories, whereas a tier of oriel windows could be raised to any required height. The restrictions on making little deviations in frontage lines tended to render London streets flat and uninteresting.

Mr. LEWIS SOLOMON, Mr. E. W. HUDSON, and Mr. W. D. CARGÉ supported the motion, the latter remarking that the judging in competitions should be left entirely in the assessor's hands, although building committees liked to reserve the supreme power of decision in their own hands. The tyranny of building by-laws was becoming worse in rural districts, where there was no necessity for intricate regulations.

Mr. MAURICE B. ADAMS observed that architects owed Mr. Stevenson thanks for having shown that good architecture did not consist in elaborate and profuse detail. The effect of our streets would be much better if the bays, oriels, and turrets to which Mr. Slater had alluded were altogether omitted. The fact was city clients demanded as much window space and as much florid detail as could be crowded into a frontage, and it needed a strong architect to withstand the pressure put upon him.

Mr. ASTON WEBB, A.R.A., thought Mr. Stevenson was a little too pessimistic about modern architecture and the results of competitions. Two of the finest buildings in the world were St. George's Hall, Liverpool, and the Houses of Parliament, both of which were won in competition. While the study of old work was essential, yet he would suggest that another remedy for our architecture would be the effort to develop on fresh lines. Difficulties and hindrances were of the greatest benefit to architects, as they called forth men's best energies and their noblest endeavours in the attempt to overcome them.

The PRESIDENT remarked that there had been a tendency to bewail the fetters put upon architects; but, as the last speaker had shown, limitations were often the greatest incentives to artistic effort. The Council of the Institute recognised the unreasonable restriction imposed by rural by-laws, and had only that afternoon decided to

approach the Local Government Board again upon the subject.

Mr. STEVENSON, in reply, said he felt, with the two last speakers, that difficulties and hindrances were often the architect's opportunities. He sympathised with Mr. Adams in his regret at the extreme restlessness of modern London architecture. As to competitions, his opinion was that the assessor had already too much power, and certainly he should not be allowed to select the architects who should compete. Open competition under their own names was the fairest method, and he could not see any objection to its adoption.

THE ARCHITECTURAL ASSOCIATION.

THE fortnightly meeting of the Architectural Association was held on Friday evening, the President, Mr. W. H. Seth-Smith, F.R.I.B.A., in the chair. Messrs. H. Cayley, S. A. Hall, and A. S. Turner were elected as members.

FLATS.

A paper on this subject was read by Mr. Edwin T. Hall, F.R.I.B.A. It was illustrated by a very numerous display of large scale plans, sections, and elevations, hung on screens in all four walls of the meeting-rooms, some designed by the lecturer, and others lent by Messrs. G. D. Martin, C. J. C. Pawley, J. Slater, P. C. Gibbs, Purchase, Boehmer, Nerrot, Poupinel, König, Von Neumann, Marmorek, Wagner, Deininger, Carrière, Koterer, Von Ferstel, Adam, Paul Hoffmann, Von Siedek, Fellner, Hellmer, Montalto, Gautrin, Rives, Rabier, and other English and Continental architects. It is not more than forty years ago when flats on any large scale were introduced into London. Among the first were those stuccoed buildings in Victoria-street, and some of them remained for years unfinished, so little or so slowly did the idea take on. This is surprising, because they had long been established in Paris and Edinburgh. In England, however, habits are very conservative, and it took even the relatively travelled people of London a long time before they would accept a flat as a permanent residence. In the provinces to this day there are many cities and towns where no flat is known, as, for example, in go-ahead places like Leeds, Liverpool, Manchester, and Cardiff, to cite places wide apart where there is plenty of energy and activity; and in two or three of these there are not any many-storied buildings for the working classes. As illustrating the feeling that prevailed until the decade 1880-90, hardly any insurance company would invest in ground rents secured on flats or lend money on mortgage of such buildings. From about 1880, however, flats began to move—as the phrase goes—and the projects for their erection steadily increased year by year until we have now a very large number of such buildings in all parts of London and in many of the suburbs. Many people of the well-to-do classes who formerly only hired a house for the season now take a flat by the year in lieu of a town house, to which they can come when they please. With a town house absence means at least caretakers and structural maintenance, whereas a flat may be locked up and the keys left with the porter, on the assurance that all will be safe during the tenant's absence. The period which has seen the birth, growth, and acceptance of the flat as a residential unit has coincided with the immense development of hotel life in London. The Langham Hotel was the pioneer of modern hotels. It was followed by Charing Cross and Cannon-street, Holborn Viaduct, the Grand, the Métropole, the Midland, the Victoria, the Fifth Avenue, the Grand Central, the Russell, and others further afield. The restaurant, too, was of the same period. Accepting, then, the fact that flats as a distinct class of property have taken firm hold of London, and consequently afford an extensive field of operations for the architect, let us consider what are

THE PROBLEMS TO BE SOLVED

when one has to design a building of this class. First, locality will have something to say. If the site be in a main West-end thoroughfare, where shops are the essentially lucrative part of the property, and have to form the ground-floor or possibly two floors, it will not, as a rule, be found to be remunerative to put family residences above, but bachelor suites generally with one sitting-room, one bedroom, and a bathroom will be found to meet a considerable demand. In the side streets of clubland similar suites, sometimes

with a manservant's room attached, will realise high rents. In Bayswater, Kensington, Chelsea, Westminster, &c., flats over shops will as a rule only be taken by the lower middle class; but in blocks which are exclusively residential and of good style, there will be a considerable demand from well-to-do people of all sorts who do not wish for the trouble of a large house, the expense of a garden, &c., and who periodically shut up their flat and go away. In Hampstead probably as high rents can be obtained as in Kensington, but in Battersea Park, and still more in places like Brixton and such suburbs, the style and the rents must be simpler and cheaper respectively. The locality, therefore, and consequently the class of tenant, will exercise an influence on the whole design. As a rule, family residences for well-to-do people will not be readily taken if over shops and in the heart of London. This objection does not hold in Vienna and Paris, where family suites in the heart of the cities are the rule, and are sometimes sumptuous. I have before me a book of new buildings in Paris—apartment houses—and of a total of fifty depicted, thirty-four are in main streets, and have shops on the ground floor. Another difference to be noted is that in Paris the rule is to make a service staircase in addition to the principal staircase. In Vienna and London this is not usual, although there are many instances to the contrary. In a building with only one principal staircase, the service staircase is a great protection in the event of fire, and where the floors are extensive should be made compulsory; but it should be at a distance from the other, and should be next an external wall with windows in it to enable the smoke to escape. In some modern and handsome Parisian buildings there are stately principal staircases which are lighted by glazed partitions, or, as we call them, "borrowed lights," from the service staircase, which itself has windows. This is bad. If a fire occurred, and the flames went up one staircase, the other would be rendered useless for escape by the breaking of the glass partitions between. When there are two or more principal staircases, this fire exit can be made by carrying both or all up to the roof, forming there a fire-resisting passage from one to the other. In St. Ermin's Hotel and Mansions at Westminster, designed by me, where the buildings cover a site of about an acre, and there are about 650 rooms, I have six staircases with such intercommunication. It is strange that in Vienna very large blocks have sometimes only one staircase, with a comparatively narrow passage leading to it from the street through the main block. In London the reason for excluding service staircases is generally the desire to keep tradesmen's boys out of the house, and to avoid the uncontrollable "back door." Very frequently goods are transmitted from the ground floor by small hand-service lifts passing outside the kitchen-window or service hatch, and very useful and speedy lifts can be made by using bicycle wheels at top and bottom with ball-bearings, wire ropes, and two balanced covered cages or buckets. Apparently in Vienna in many buildings all goods come up the one staircase to the front door. A further point to observe is the very small kitchens and offices of the Paris and Viennese flats; 13ft. by 10ft. appears to be considered ample, and many are much less. There is no scullery, but sometimes a small pantry with sink is attached. This, however, is by no means general, and a larder is still more rare. I am told that, small as the kitchens not infrequently are in Vienna, it is by no means unusual to find them very handsomely fitted, the walls tiled and decorated with handsome ware. My informant says perhaps £300 is spent in such a way, and the mistress takes her friends to see the kitchen. Yet another point of dissimilarity from our practice is the fact that in Paris frequently there is apparently no bedroom for the servants within the suite. In some cases the servants' bedrooms for the whole building are on the top floor, although there are many separate suites in the building. I should think a good deal of inter-family gossip is thus exchanged. In Vienna generally one small bedroom for a servant is provided, sometimes opening only from the kitchen. There is on one of the drawings displayed one handsome suite of rooms, with such a bedroom about 45ft. in area, in another 70ft. in area. These are not healthy. Certainly 100sq.ft. should be a minimum. Of course, other rooms may sometimes be allocated to servants, but having regard to the few bedrooms and the size

of the sitting-rooms this does not appear to be probable. In London it is usual to house the servants within the flat; but here, as well as in Vienna, the vice of making a bedroom open out of the kitchen is still practised, and when one reflects that slops have to be carried through the kitchen in times of sickness and of health, it will be seen how insanitary such an arrangement is. Our friends abroad are not always so particular as we are in other sanitary matters, and you will note on the screens some bath-rooms with no light and not against external wall, ladders similarly situated, even behind water-closets, and the evil practice which obtained in England, even within the last half-century, is still maintained abroad, of lighting and ventilating water-closets from staircases and passages. Here that is no longer possible, thanks to our sanitary laws.

INTERNAL SOIL-PIPES.

I have yet another little sanitary point to mention, and that is the danger of taking soil-pipes of flats down inside the building against external and even internal walls in chases. Such chases afford channels for carrying infectious diseases from one suite to another. They are passages for vermin and for sound, to say nothing of the danger if the pipe leaks. Our laws have practically banished this evil from London, although I have seen it practised in some of our pioneer flats. Internal staircases, however handsome they may be, with only top-light and ventilation, are also to be deprecated in confined areas where there are many stories of flats. Such staircases, in the event of fire, become furnace shafts, and at least get full of smoke, choking those trying to escape. The odours of the lower part of the house ascend to the top, and, again, illness is conveyed by them from one part to the other.

THE VENTILATION OF WELL-HOLES.

While many will realise the last-mentioned evil, it is not all who pay attention to it. A current of air should pass through small internal areas or courts extending from the ground to the sky. These small courts are frequently and not inaptly called "well-holes." Now, everyone knows that the air at the bottom of a well is often so bad that a candle will not burn in it. A "well-hole" area without through ventilation is in a lesser degree bad in the same way; and when, as is generally the case, there are gullies at the bottom giving off foul gases from fermenting deposits, it can be realised that windows opening into such areas are merely inlets for poison. All such areas should be ventilated by means of an inlet of large capacity at the bottom from some road or considerable open space where there is always movement of air going on. Fourteen or fifteen years ago I realised the evil and practised the remedy, and we obtained its insertion in the London Building Act of 1894. I was much pleased to see the necessity for this bottom inlet to small areas urged in a recent letter from M. Poupinel, of Paris, when he was kindly forwarding some of the drawings now exhibited. M. Poupinel has small inlets to his small courts, and has taken fresh air flues from the exterior to every fireplace in his building, and has outlet ventilators in his kitchens. We in London are accustomed to outlet ventilators from not only kitchens, but reception rooms and bedrooms, but they are uncommon abroad. There is only one further point to mention before leaving this hygienic branch of my subject, and that is the desirability in our cities of having large windows in our rooms and keeping the tops of them reasonably near to the ceiling.

FLOORS.

Another subject is the construction of the floors. In all high buildings for many families the floors should be of fire-resisting material. Some years ago Mr. Evans patented a floor which was composed of ordinary wooden joists laid close together and well spiked, thus making a solid wood floor. I do not know what has become of the system, but its tests showed it to be practically impervious to fire, and from its fibrous character it was claimed to be soundproof. Another mode of constructing a floor is to fix rolled steel joists and build 4½in. thick brick arches between. This used to be the most common method of construction in London, and it is still much used in Vienna. We see it shown on one of the exhibited designs. Above the brickwork were wood joists and an ordinary floor. The most common because cheapest method used in England is, however, to place rolled steel joists at regular intervals,

generally 2ft. apart, and to fill the space solid with concrete made of cement and coke breeze, bringing the soffit of the concrete an inch or two below the joists to protect the steel from the direct action of the fire. Frequently small fillets of wood were, and sometimes still are, laid on the concrete, and the boards nailed to the fillets. Without ventilation, however, if the floor is covered with linoleum, such fillets and the boards over them may decay from dry-rot, and the same remark applies to linoleum laid on boards nailed direct to concrete. One objection to the solid concrete floor is that it is not impervious to sound. The only way to remedy the evil is to get an air cushion beneath the floor itself, and to suspend the ceiling. There are several ways of doing this. To get over the difficulty regarding wood floors where these are intended to be covered, I have in many recent buildings dispensed with boards, trowelled the floor with cement, and covered this with linoleum, either plain or ornamental. At once a furnished appearance is given to the floor, and rugs or carpets look well on it. The material is pleasant to the tread, it is not so resonant as wood, and there are no joints in which vermin may harbour. Turning now to the æsthetic side of the subject, let us consider

THE BLOCK PLAN.

First of all, do not crowd too much building on your land. Doubtless a site that is crowded will show a large rent-roll on paper, but the building will not in the end be so popular as an open and more airy and consequently more healthy block, and the rents of the former will have to be reduced. Of course the shape and extent of the site will largely determine the block plan, but for our purpose we will assume a considerable area to be at our disposal. It may be laid out with a large carriage quadrangle in the centre, as in the examples on the screen of No. 87, Boulevard St. Michel, or No. 32, Rue la Boétie, both belonging to Le Nord Assurance Company, the architect being M. M. J. Nerrot. In these the entrances are from the courtyards. In Mr. C. J. Pawley's, St. James' Court, Westminster, we get one large courtyard with a narrow roadway on each side leading to it behind and through the front block. Another type is where the main entrances are from the roadways, as, for example, Der Habighof, Vienna, Herr H. Adams, architect. Here we have as characteristics two blocks parallel to the Hauptstrasse and one facing the side street. The internal courtyards are used merely for light and air. There is a third method, as at St. Ermin's, Westminster, where the buildings are U-shaped, the large central quadrangle being open to the south or main front. This open quad may, however, be at the back if the aspect is more suitable at that side. This third method is shown in Mr. Paul Hoffmann's recent buildings, 171-5, Queen's-gate. The inclosed quadrangles permit of more land being covered than where the fourth side is left open, but the latter scheme has many other advantages. Even, however, on a comparatively small site a very pretty effect may be obtained by having a central circular carriage court, partially glass-roofed, over the ground floor, the area above being open for lighting and ventilating the staircase and rooms.

INTERNAL PLANNING.

Coming to a consideration of the internal planning of the buildings I think a good public entrance-hall on the ground floor is a *sine quâ non*. The porch and vestibule should be simple, and may be plain. The hall should be spacious; not a mere passage, but a good room, well lighted, the walls panelled in wood to a considerable height, having a large, hospitable fire, and a panelled ceiling. Personally I do not like the "gorgonzola" and other marble wall effects which are so frequently seen in modern blocks. They are not in harmony with essentially domestic buildings, and I prefer the more cosy effect of a good hall in a country house. The position of the staircase must be governed by the shape of the site, but if it can be made a part of the hall scheme so much the better, as it produces an effect of spaciousness which is valuable. I would draw attention to the very general feature abroad of staircases planned as semi-circles, ellipses, or on other curved lines. The result is very pleasing, and contrasts favourably with the straight flight of stairs in a rectangular space so frequently seen. I do not like curved flights of stairs to extend, without any intermediate landing, from floor to floor. These appear to me rather monotonous, as well as tiring

and dangerous. They are, however, common in Paris. The best planning, internally, is where on each floor there is but one flat off a main staircase. Such a flat is more private, and gives an idea of not being limited by its neighbour. There may, of course, even with this arrangement be several staircases within the building itself, and several flats on a floor. Of course, "the one staircase one flat" idea would only be practicable when the flats were of considerable size. When there are family suites, each of but five or six rooms, one staircase may reasonably serve two suites on each floor. This gives a certain elasticity to the place, as two small suites may then be combined and let as one large one. In high buildings it is not desirable to have a greater number of flats on a floor to one staircase. Mr. Hoffmann, at Queen's Gate, has his centre block with one flat to a staircase, and the wings with two flats to a staircase. The plan is an excellent example of how to lay out a large site. In the Avenue Ledru Rollin, No. 68, M. Montalto gives another good U-shaped plan, with the quadrangle at the rear and two flats to a floor. The site is out of square, but the planning is admirable, and all parts are well lighted. There is one main staircase, and there are two service staircases adjoining the kitchens.

THE PLANNING OF A FLAT.

Itself is an interesting problem, one requiring great thought. First, there should be a good and well-lighted hall, or antechamber. The reception-rooms should be readily accessible from this, the bedrooms more retired, and the offices out of sight, but handy for service to the principal rooms and to trade access. Efforts should be made to get away from a mere narrow passage hall, and to adopt some more compact plan. An octagon or a circle, a hexagon or an ellipse will form pleasing forms, and all admit of decorative treatments. A good example of an octagon treatment may be seen in M. Nerrot's building in the Rue la Boétie, and there is another at No. 42, Avenue Henri Martin. The rooms, too, even in rectangular sites, need not all be square or rectangular. M. Poupinel, in his No. 10, Rue Descamps, gives an excellent plan of a flat, interesting as a composition, the rooms of different geometrical shapes, passages well lighted, the whole convenient and well arranged, although, perhaps, the hall might have had a better window in the angle without injury to the other rooms. In this building we note on the ground floor an up-to-date cycle stable in a convenient position, an elliptical staircase with lift, one suite on each floor, consisting of three reception and five bedrooms, bathroom, two water-closets, a little kitchen (about 11ft. 6in. by 9ft. 9in.), with an "office" or pantry fitted with cupboards, between it and the service staircase. There is a meat-safe in the kitchen window, but no separate larder. I have already referred to the servants' bedrooms on the top floor, to the ventilated courts, &c. It would have been better if the service staircase had an exit on the ground floor distinct from that through the main entrances. As to height of rooms, it appears to be very general to adopt about 10ft. to 11ft. in clear in all three capitals. This is ample for moderate-sized rooms; a greater height makes them appear smaller in area. Windows should be ample, especially in a city, and I would draw your attention to the large size of doorways in the Parisian examples. Passages should be light, and the more direct the better. Do not forget to provide ample cupboards. Baths, sinks, water-closets, &c., should not be all over the place, but, within reason, grouped near together. On the subject of planning, I would sum up shortly by saying, make your plans interesting, bright, and, above all, study to make them simple—the simpler the better. You may be sure if you see an intricate plan, it is ill-digested, inconvenient, and generally not so well lighted or ventilated as it should be.

SMALL SITES.

We have hitherto considered only large sites; but there are a greater number of small sites which have to be treated, and I would refer you to Baron Max Ferstel's design of a house in the Stammgasse, Vienna. It is six stories in height, the top floor containing studios. The other floors contain each a flat with five rooms, in addition to a kitchen, with servant's bedroom attached, and a larder. Here the two nurseries are placed at the rear, with separate service from the kitchen.

There is also an access from the living-room to these children's rooms, so that the mother has a ready control. The bathroom and water-closet are ventilated into a small area; but the bathroom is only apparently accessible from the living-room, which appears to me to be an undesirable feature. The planning also of the suites over the Café Secession, in the Rothenthurmstrasse, by Professor Julius Deininger, is worthy of study. Herren Filner and Helmer, in No. 21, Schostening, have a pleasing and clever little plan, with a good courtyard. The suites have a hall, three rooms, bath, and water-closet. Among the Parisian dwellings there is an excellent treatment of an acute-angled small site at the corner of the Rue Montmartre and the Rue Réaumur by M. Gautrin. The angle itself is occupied by a circular salon, the other six rooms all face the two streets; the staircase is circular, lighted from an internal court, and the passage is also well lighted. M. L. Carrier, at the corner of the Rue du Faubourg Saint Honoré, has also a most convenient and pretty treatment of a good site. Another good plan is that at the angle of the Faubourg St. Martin and the Rue du Château d'Eau by M. Rives. In London, Mr. John Slater's corner of Mortimer-street is convenient and well lighted. In Palace Chambers, Buckingham Gate, Messrs. Martin and Purchase have an angle site which appears to have required considerable thought to evolve a plan to give good light to all the apartments. Perhaps it may be permissible to mention one of my own buildings with a rather awkward site. It is a quadrant on plan at the corner of Sloane-gardens. Among the plans of bachelor suites we have one of Mr. John Slater's for a very shallow site in Well-street. He puts two suites to a floor off each staircase, and also, in addition to a parlour or sitting-room, two bedrooms, and a bath-room with water-closet in it, gives a small kitchen. The whole forms a very small self-contained residence, to be let at a low rent. Mr. Paul Hoffmann, in Harewood-place and Hanover-square, has one staircase, a corridor common to several suites, each containing an entrance-lobby, a sitting-room, bedroom, bath-room, and water-closet, but the two end suites can be combined to make a family suite. I would draw your attention to two sets of plans of large buildings in Vienna, the sites of which are acute-angled triangles, both by Professor Carl König. One at the corner of two streets is the palais for Herr Josef R. von Herberstein. It has a carriage entrance in the centre of the principal front, a small glass-covered courtyard in the centre, and a way through to the side street. You will note that there is a stable within the main building entered from the courtyard. The second and third floors are divided into two complete suites of flats. Two principal staircases are carried to the mezzanine and first floor. One of these only goes up higher, and a service staircase is carried from bottom to top. A difficult site is well utilised, and all parts of the building are well lighted. The other building, with a site of almost identical shape, but larger, is surrounded by roads, the Augustiner Strasse, the Tegetthoff Strasse, and the Fährich Strasse, and the approaches are arranged in the same way. In the Palais Leon-Wernberg by Herr Baurath von Neumann, we have an example of another large building with a good central area. One staircase above the first floor serves a large number of rooms, forming two suites per floor. From the landing an outer gallery gives access to the suites and borrowed light to two or three rooms. On the first floor I would note the careful planning of the acute-angled excrescence on the right hand. The same architect sends us drawings of two other large buildings erected from his design. It may also be of interest to compare the design by Herr Victor Siedek in Vienna with that by M. Michel Rabier in Paris for sites of nearly the same shape. It would not appear to be desirable to carry the limits of my paper to a further detailed description of planning, and I will conclude by some observations on

EXTERNAL DESIGN.

Manifestly, the accessibility of material will have an important influence on design if the architect intends to display his building material. In Paris stone is practically always used. In London red brick, with or without stone, is generally used. In Vienna the construction is very largely of brick, but the facing is of stucco or cement, and so are most of the columns and architectural detail, even in some of the largest

buildings. Owing to the commercial requirement that every floor of flats must be equally well lighted, and to the structural desirability in high buildings of getting voids over voids, which together very generally result in windows being made of the same width on each floor, a Classic treatment is nearly out of the question. Gothic, except in its latest English style, has not been attended with great success, and practically everywhere some branch or phase of Renaissance has become more or less the accepted basis of design. I have used the word Renaissance in a wide sense, because while some have introduced the normal Italian features, others have broken quite away from them. We know how, more in sorrow than in anger, one of our own Classic masters laments the depravity of a truant architrave or frieze in an entablature, and I can quite imagine the similar sensations of some of his Austrian colleagues at what is, I understand, there called the Secession style. A very interesting example of this style is shown in Professor Julius Deininger's "Romerhof." Note the original treatment of the exterior, the sculptured figures on the angles of the bays, the panelled pilasters with masks and long pendant ribbons, the coved floral cornice without architraves or necking, the carved or, rather, modelled surface treatment of growing trees. Another example is a house in Wenzels Platz at Prague by Professor Jan Kotler, pleasing and refined in treatment; or, again, Professor Otto Wagner's house in the Magdalenenstrasse, Vienna, of which two views are given, one showing the circular angle of the building, with its pavilion on the top story flanked by pilasters, on which an effect of plain and rusticated courses is produced by a decorative treatment of growing foliage; the other illustrating the elaborate surface decoration of the principal elevation. There is also a design by Herr Oscar Marmorek, Der Nestroyhof at Vienna, illustrating that architect's views on modern architecture. Herren Filner and Helmer's design for the building on the Franz-Josef Quai in Vienna is quite different in character, and is a refined treatment of Renaissance. Their St. Annahof is an example of design in a Mediaeval style, quiet and picturesque, the surface unbroken by strings and capped by a small cornice. The lower part is enriched with broad bands of nearly life-sized figure-subjects modelled in bas-relief. In Paris the architecture of the apartment house has generally its characteristically native treatment, shows great refinement, and, in my view, adapts itself admirably to the purpose of the buildings. In London the most conspicuous block is on the Embankment—Whitehall Court, by Messrs. Archer and Green—a stone building, as to design based on French Renaissance. Most of the other flats in London are of red brick and stone combined. They are well known and accessible to all of you. Doubtless in some, and may be in all, there are features which, whether admirable or not, are suggestive, and from which you may derive an inspiration of great value. My endeavour has been to recite, first, the practical and hygienic considerations regarding safety from fire, exits, ventilation, and sanitation, which form the very bedrock on which to base a design; then, on this basis, to consider the aesthetic side, to suggest principles governing the laying-out of various sites, the internal planning and lighting the buildings, and their exterior treatment. I have sought to interest the meeting by illustrations from the works of many architects at home and abroad. If I have succeeded in offering any food for reflection, then my labour will not have been in vain.

A long discussion followed the reading of the paper, in which Messrs. J. J. STEVENSON, F.S.A., PAUL HOHMANN, J. J. F. SYKES, M.D., FRANCIS HOOPER, C. J. C. PAWLEY, C. J. CARVILL, A. J. T. BOLTON, and the PRESIDENT took part, and a hearty vote of thanks was accorded to the lecturer, and also to those who had lent illustrative plans.

SMALL GARDENS.

AT the last meeting of the Birmingham Architectural Association a paper on this subject was read by Mr. T. H. Mawson. Mr. W. H. Bidlake occupied the chair. The lecturer remarked: You cannot successfully plan a cottage residence without deciding the principal features comprising the garden scheme. The designer of the cottage ought either to design the complete garden scheme or otherwise agree to allow of an

exchange of opinion between himself and whoever may have to plan and carry out the garden. Even supposing the landscape gardener to be an artist with insight into, and in full sympathy with, true architectural dignity and expression, the architect has much the best opportunity of making a successful and more complete plan. Further, if the architect does not undertake the designing the landscape gardener in all probability would not be asked to do it, and as a consequence, the garden setting to the house, would eventually be the joint production of the local jobbing gardener and the client. It is just as necessary for the architect to realise the proper connection between the house and garden as for the garden-designer to obtain a grasp of the character of the design and the planning of a house. The approach to a house, whether in the form of a drive, avenue, a simple court, or merely a walk, is the first impression a visitor gains, and generally the most important detail in the garden scheme, and is at the same time the introduction to the house itself. Architects who wish to lay out gardens would do well to cultivate the faculty of studying nature with a view to the attaining of aggregate effects, a grand antidote against mere sleight-of-hand draughtsman proficiency and commonplace invention, and against a too pedantic academical education. A circumscribed garden is seldom a success unless a formal treatment is applied. Mr. Kemp who wrote that excellent practical work, "How to Lay Out a Garden," realised this. The advantage of this method is that the garden is brought into direct relation to the house; that, in fact, a garden becomes a necessary outdoor extension of the family requirements, and of the entertaining arrangements—one set of apartments under cover, the other open to the interchange of shine and shower, and of each season's respective display. The relation of this series of garden apartments to the house would be more ably grasped by the person who had planned the house, and knew the relative use of each room to the other. The ingenuity necessary for the planning of the house would assuredly find larger liberty and unfettered scope in controlling the whole. But perhaps the greatest advantage which the architect possesses lies in the fact that he has the control of the entire sum which his client is prepared to spend. If one realises that half of the money spent on, say, the barge boards, finials, and bristling insincere ornamentation would have given you some chance in the garden, one cannot help regretting the absence of some controlling master mind who, with perfect unanimity of purpose and comprehensive grasp, had had the spreading of the money over the larger area to the ultimate satisfaction of both architect and client. Having given you my reasons why you should undertake the designing of small gardens, I now wish to state a few necessities and qualifications. In the first place, a proper survey with accurate levels is needed. You will need to lay out a very large number of gardens before you can dispense with this necessary operation, even to the extent of making a preliminary sketch, for to be any way successful the plan must be arranged to fit the ground and give expression to its contour. You must be able to judge when ground requires draining; and having decided upon this necessity, be able to arrange it in an efficient and economical way. You must know a little about soils; this is a question which troubles would-be garden-designers greatly. Now, for the horticulturist pure and simple this is a most important branch of study and research, but for the garden-designer there are a few sound rules which will meet his requirements whether the soil is wet or dry, light or heavy, clay or gravel subsoil; whether the soil lies on limestone or in chalk. If the soil is wet, good drainage should remedy it; if clay, good drainage and the admixture of burnt clay, town refuse. Good trenching will usually be beneficial if light and sandy with an admixture of clay or cow manure; as a rule, however, you may say that a dry subsoil is best for a garden. The first great desideratum is unity and cohesiveness. What is required here is some great controlling power to marshal and organise the petty clevernesses and talents and gifts, and make for and lead up to one ultimate end. In the few architects' gardens I have seen I notice that they usually plant shrubs, both formal and others, in the grass, evidently expecting them to thrive as they do in properly-prepared and tilled borders. This is a mistake, and for several years at the least, until

the shrubs are thoroughly established, all grass and weeds should be kept clear of their roots. I know how much better grass looks when it sweeps up to the stems and trunks of the trees or the leaves and boughs fall over in a fringe upon the sward. How difficult it is to convince clients of the dignity of mown grass, and how often do we see the majestic trunks of a fine group of cedars or timber trees muddled up with the inevitable fussy rhododendrons. It is in the direction of flowering plants rather than shrubs that variety is to be sought after, and for these you must rely upon the nurseryman's knowledge of things, simply controlling the shape of the beds and borders in which they are to be planted, and, perhaps, the massing of the few varieties which are essential to the architect's garden. Now, respecting the planting of hedges, screens, &c., before you attempt to do anything, satisfy yourself that what you plant will grow. Having made up your mind as to the character of the shrub or tree you wish to plant, you will find it comparatively easy to discover whether or not it will grow in the neighbourhood, and, if not, what would form the best substitute. There are some broad principles which it is necessary to grasp before arranging your garden plan. The controversy which has been waged between garden designers and architects does not apply to small gardens, for all are agreed on the general principle of formality, although not agreed as to the detail by which this formality should be expressed. Have you ever noticed the difference between two gardens, apparently the same soil and the same aspect? The one seems to have a blight upon it: everything, grass, flowers, shrubs, trees, seem to grow so tardily and sparsely, the shrubs stunted and starved, trees lanky and bare, the flowers shrivelled, scentless, and blasted—a reproach to its neighbours; and in the adjoining garden everything is luxuriant and profuse. But what is the reason for this contrast, this difference? You would be able to tell me at once if there were two adjoining houses in a correspondingly opposite condition, both apparently built with the same hand and with a corresponding amount of care—the one looking singularly happy, the other, in spite of suitable window adornments and owner's care, looking decrepit and unhappy. Your trained eye would at once glance at the unlevel joints, the slightly irregular ridge, finials, and chimneys, and other lines slightly out of the perpendicular, and pronounce the verdict, "Bad foundations." The foundation failure: unprepared soil is the cause of almost all garden failures. You may procure the choicest shrubs and flowers, manure the borders, roll the grass,—but if the soil is not of sufficient depth, and is not properly prepared, it will be of no avail. By all means save and store all turf and soil from the diggings and the foundations. For a flower border, it is a good plan to lay, at a depth of about 2ft., a layer of broken brick or some absorbent material, provided that the soil water drainage level is deeper; then to overlay this with a covering of ashes, and then to overlay this to a depth of about 21in. with soil of desirable lightness; if too heavy, should be mixed with sand, and should have abundant vegetable matter and fibre in it, such as the decayed turf from close green pastures yield. For trees and shrubs, a depth of from 1ft. 6in. to 2ft., with a plentiful admixture of the fibrous turf loam, though it need not be so richly manured as the flower border. Grass also requires a depth of soil not less than 8in., with a well-drained bottom properly prepared. Although the first outlay may be greater, it is cheapest in the end to lay a sound foundation. Of course, it is necessary to know what to plant, and herein is the most difficult problem with which you have to deal, and very few of you will ever master thoroughly the technicalities. At the same time, very few varieties of trees and shrubs are required for making a small garden beautiful. The present-day tendency seems to be to cram in as many un-English varieties of trees and shrubs as possible, notably rhododendrons and common laurels, and aucubas, &c., their big polished leaves entirely out of scale with the sober harmonious box, holly, and yew of our predominating Northern grey skies. It is the preponderance of such things that make town suburbs, town cemeteries, and town parks so disappointing. There are two considerations I would especially impress upon you. First, the desirability of disabusing your mind of your preconceived notions of the art which is said to conceal art; and, on the other hand, the value of

plain surfaces and of definite, unhesitating lines. In ignoring the latter it is quite true that you may be able to cover your lawn with trees and shrubs from every part of the Temperate Zone, just as you may fill your drawing-room with all sorts of bric-a-brac; in both cases you may, instead of securing a sense of restfulness, succeed in giving them an aspect of fussiness. In laying out definite lines you may not get quite so many of those little surprises so much sought after in gardens, and you may not even be able, by the exercise of a little trick, to make your neighbour's garden look as if it belonged to you, but you will be saved the humiliating knowledge that your garden is a fraud, and that your visitors are sure to find it out. The question of fences cannot be profitably discussed in this paper; but split oak, which lends itself to such a variety of treatment, is at once one of the simplest, and at the same time one of the cheapest forms of fencing. If we could in this country use, in conjunction with this fence, the trained lines of limes and laburnum as they are used in Holland and France, we could obtain some delightful effects. The fence which is least permanent and least desirable is the strained wire or iron hurdle. We may now consider more fully the placing of the house on the ground so as to make the most of the ground. Where the extent of ground is strictly limited, as is invariably the case when you are building a small house, the greatest mistake you can make is to cut up the ground too much with drives, &c. I hold an opinion, which I must admit is at the present time, even amongst architects, very unpopular—viz., when the plot does not exceed, say, two acres, drives are seldom needed, and that every real requirement can be met by a simple carriage-court connecting directly with the high road. This court you could probably inclose and pave for a less sum than you would otherwise spend on the drive. If the stable could be arranged to the west side of this court and the small kitchen garden, kitchen offices also arranged to this side, you would then have all the more ground at your disposal on the sunny side of your house. Where a drive is really necessary, make it as direct as possible. If the ground is fairly level, and the junction with main road is convenient, a straight road, treated as an avenue, would give the best effect; but if the ground is rising and of irregular contour, then perhaps a curved drive would be the only one possible. Above all things, do not make your gardens too large. Perfect keeping is the soul of a small garden. I can assure you that you will have considerable difficulties with your clients on this score. Find out if you can what labour your client intends to employ. If a man only two days a week, a quarter of an acre would be sufficient; if he can employ a man and a boy, the garden might be as much as one and a half acres, or, if no glass, as much as two acres. You ask what I shall do with the remaining portion. If you have sufficient for a paddock for the pony, you could not put it to a better use, and in any case you can never go very far wrong in planting an orchard. There is also the arrangement of the wilderness, or wild garden. If your site has been well chosen, the ground will slope away from the house; if it does so in a southerly direction, you will have a very sunny garden. This fall of ground suggests terracing, an operation which in a suburban district requires much more careful arrangement and adjustment than would be the case in open country, where, as a foreground to charming distances, the balustrade serves as a frame or setting. Now, there are roughly three ways of terracing—by walls, by grass slopes, and by planted slopes. Of the three, walls are the most satisfactory. A balustrade and extensive stone dressings are seldom appropriate to a small garden, except the house be severely classic. Terrace walls—maintenance considered—are probably the least expensive, and should never be built as if they were to remain naked. I can never think of a wall as so many yards superfluous or Accrington bricks, but as a wall of the most delightful greenery. If you are in a brick country, any good hard brick the colour of which approximates to that of the house would answer; if in a stone country, rough rubble; and, if possible, the pointing omitted, so that toadflax, houseleeks, &c., could grow in the crannies; the coping, if dressed, to have very simple mouldings. Grass slopes are practically impossible if the batter be less than 1 to 2, allowing step of 12 in. by 6 in.; but whatever batter you adopt for one bank should apply to the whole of the slopes in that part of the garden. Planted slopes are very

charming, but the great drawback is that you have to wait many years for the result. The one point to bear in mind when laying out batters is to avoid diminishing lines, as, for instance, when you make a sloping walk at the end from the upper to the lower terrace. In deciding the width of your higher terrace, do not foreshorten your ground. Nothing gives more character to a garden than the form, arrangement, and quality of its grass lawns; and nothing is more refreshing than to look out of your room window on to a lawn perfectly formed and kept. To secure this perfect form is a difficult task. The terrace next to the house should be treated simply, but with a certain amount of colour from flowers, and certainly have a border next to the house in which to grow climbers. I am fond of broad-paved walks on terraces next to the house, with a few quaint shrubs either planted permanently in beds or set out in tubs. Avoid the usual pattern of broad-brimmed vases filled with lobelia, echiveria, and calceolarias; green or oak tubs or big flower-pots are far better, but do not have too many even of these. If a garden is very small, the flower-borders should be long and continuous, as in this way you get a much better display of bloom. Small parcel gardens, such as you would wish to look upon from your entertaining-room windows, invariably produce the best effect when in beds of the simplest design and at a lower level than the house. Such gardens should be perfectly level, and have some kind of boundary fence round them; this may be simply a low box edge 2 ft. high, or a low trellis. In some cases it might with advantage be designed as a sunk garden, with grass slopes and steps at the corners or at each side; if on the same level as the rest of the ground, the flatness might be broken up by having a sundial or lead figure in the centre. According to the measure of the exact symmetrical balance secured in the house, so ought the disposition of the features on the terrace so to be, though not carried to the point of having a greenhouse on each side of the garden, necessitating two heating operations and two objectionable chimneys, as shown in a recently-published design. If perfect balance you must have, choose a pair of garden houses, one for use as a tool-house and the other as a summer-house; but if balance is secured by the freer and more picturesque methods adopted by the majority of modern architects of coupling and grouping of gables, chimneys, porticos, oriels, and the like, balance ought to be secured in the gardens by similarly free measures. You would, whilst securing balance, obtain much greater variety. One of the most awkward and expensive pieces of ground with which you will at any time have to deal is that in which the house does not follow the natural contour of the ground, but falls slantwise across the garden front of the house. Where you have a subsoil which is easily removed, such as soft sand, an alteration to the natural features may be more easily carried out than a modification of the plan of the house. Although I have a great preference for walls when the ground slopes from the house, I prefer grass slopes when on the south side the ground falls towards the house. The more your ground slopes away from the house, the more will you feel the necessity for plantations; but the reverse holds good when the ground falls from north and south towards the house. The last detail to which I refer is the planting of the flower borders, in connection with which I rely almost entirely upon hardy perennials and those of the hardiest varieties. Weeding-out is one of the most expensive kinds of gardening; there are, however, a number of annuals and biennials which are most useful for filling up blank spaces. The greatest care must be exercised to secure effective groupings and continuous show of flowers throughout the greater part of the year. Avoid planting in lines, but rather try to secure a little irregular colony of each plant. Finally, let me suggest that when commissioned to design a house, in connection with which there is to be a garden, that you should seek to co-operate with the garden designer from the time you prepare your first sixteenth-scale plan, and to agree on some mode of treatment of those parts of the scheme where there is an overlapping of interests.

Extensive alterations have just been completed at the public baths in Cockridge-street, Leeds, from plans by Messrs. Walter Hanstock and Son, of Leeds and Batley.

AN ARCHITECT'S TRAINING.

AT a meeting of the Manchester Society of Architects, held on Jan. 10 under the presidency of Mr. E. Hewitt at Standard Chambers, King-street, Manchester, Mr. Hugh Stannus, of the Manchester Municipal School of Art, read a paper on the subject of the training of an architect.

Mr. Stannus mentioned that since he had undertaken to read a paper on this subject the authorities of Owens College had made a move forward in their direction, and what he had to say was somewhat influenced by their intentions in the arrangement of his plan into years and sections. He acknowledged some indebtedness to Mr. Arthur Cates, the former chairman of the Board of Examiners of the Royal Institute of British Architects, who had, he observed, great experience of the necessity and value of the higher education in architecture. It might be asked whether such education was necessary, but in Manchester that question was already answered in the arrangement by principals for their pupils to attend the School of Art for an afternoon in each week. Speaking generally, it might be said that beyond what was termed professional practice, which could be learned nowhere else, there was not much opportunity for the higher education in most modern offices. The principal was too much engaged to afford time to be a schoolmaster, and the senior draughtsman had rather to get work out of the pupils than to pump education into them. No system could be exhaustive, and the end of all the education they could give was to enable the student to educate himself. Should the system be academic or individual? If they could afford one separate teacher to each student, then the system might be individual, but in such a case the student lost the advantage of seeing the various solutions of different problems by other minds and the further great advantage of emulation. So far as his experience extended, no student who had any originality in him ever lost it by judicious, systematic training. Hence he thought it better to teach according to a well-considered system during the earlier period of pupilage, and to leave the development of individuality to come in the later stage. In other words, he would generalise in the earlier and specialise in the later period. It had been objected that the academic teaching reduced all students to one dull level of monotony, and that as a result of this a street in Paris was the same from one end to the other, and was not so interesting as a street in London, where every shop-keeper did what appeared right in his own eyes, seeking only to shout louder than his neighbours. He contested the objections, and contended that the street in Paris was not the same from one end to another. Within the limits which had been fixed for the common good, there was a greater variety of artistic detail than in London, for the Parisian architect, having his mind set free from the lower considerations, could devote himself more fully to what, after all, gave the measure of the artist—the arrangement of the features and the details. Further, the academical method of study would bring to the student's mind the strength and the weakness, the applicability and the inapplicability, of the typical treatments that were used in each of the great styles to the different problems of modern building, and when a man had learned what to do without then he was on the direct road to make his own style by the omission of useless details; and as minds varied so would the architecture of our streets. Discussing in detail a chart of studies which he had drawn up, Mr. Stannus said he assumed the length of the course at three years, not because it was long enough, but because it was generally all a man could give. The method of study in the old times at Paris used to be to learn (1) all about construction, (2) all about plan, (3) all about elevations, and (4) mix the three. He would prefer to run these concurrently, to emphasise the fact that architecture was one. In the course of further comment, he urged that student should look upon planning as a fine art. He assumed in the chart he drew up that a student would be able to attend on the instruction referred to for five hours a day for five days in the week for 40 weeks in the year. The collegiate recognition of architecture was a desirable object in view of the special circumstances of architectural education. He considered, however, that two points demanded attention—namely, the requirement of attendance on lectures as a condition of granting

degrees and the examinations. With regard to the attendance at lectures, which was possible in the collegiate life and discipline of the old universities, he reminded that the modern stressful life of Manchester, with its belt of subsidiary cities, killed the monastic ideal and left no place for monastic manners. Still, if attendance was required, he would plead that this should not be enforced for a period of three years from the inception of the system. Further, any student who desired to proceed to a degree during this transition period should be admitted to the examination on proper recommendations. A certificate might be granted to any student who had attended the lectures of one particular section and satisfied the examiner on it, without his being compelled to take the whole course. Thus the system would be made elastic until sufficient experience had been gained. He regarded examinations as necessary at the end of every course, whether long or short. The aim should be to make the education systematic rather than sporadic. While they did not desire to manufacture Admirable Crichtons, they ought to strive to deepen and broaden the education of the architect of the future, so that in his intercourse with his client and the contractor he should hold aloft the ideal of a cultured, practical, and trusted adviser. In replying to a vote of thanks and remarks which had been made by members present, Mr. Stannus said that he thought they would have to reconsider the question of pupilage. Students would go first for academic instruction for three years, or whatever might be the period, and then architects would find their pupils worth more to them. They might be able to take a pupil without any premium at all. The academic system, in his view, should come first, and then the student could go into an office to learn professional work. He thought they ought to welcome the institution by any college of a course which would tend towards the raising of the professional tone which they all had at heart.

BELFAST ARCHITECTS ORGANISE.

AT the Town Hall, Belfast, on the 15th inst., Sir Thomas Drew, President of the Royal Irish Architectural Institute, F.R.I.B.A., presided over a well-attended meeting, which had for its object the formation of a local organisation affiliated with the Royal Institute of Architects of Ireland. Among those present were—Messrs. W. Kaye Parry, F.R.I.B.A., hon. sec., S. P. Close, Vincent Craig, F. H. Tulloch, J. J. Fennell, M. A. Robinson, M. Fitzsimons, W. C. Lepper, W. J. Gilliland, J. C. Dewhurst, J. J. McDonnell, J.P.; J. St. George Phillips, G. W. Crowe, and W. S. Jervois. The chairman said that as a native of Belfast he was pretty well aware of the difficulties to be met with in the formation of a co-operative society. His forty years' experience in Dublin had also taught him the enormous advantages and good fellowship which were engendered by cohesion amongst the members of the profession. He had heard it said that it would be impossible to form a cohesive society in Belfast. He was perfectly well aware of the difficulties, but he thought those difficulties were not insuperable. The greatest difficulty in bringing about unanimity of practice in the city was the question of fees. He knew the position in Belfast was very different from that in many other towns, and differed in toto in respect to the class of buildings to be erected. There were buildings here of the warehouse class and rows of houses in a growing town, and it was unjust and unreasonable to lay down a hard and fast scale of fees. Sir Thomas then went on to speak of the unsatisfactory condition of affairs amongst the architects when he first went to Dublin. There was little cohesion, and the members had very old-fashioned and evil notions; but since that time a better state of things had been brought about. Instead of the proper percentage being paid to architects, half and sometimes less was paid; but since that time the old system had died out, and now the architects were working together on terms of the most perfect harmony and understanding. There was no architect who was in any difficulty, but the other members of his profession came around him and supported him. He was quite sure that that society would strengthen all its members by co-operation; but he did not think at present there should be any very stringent rules laid down as to professional conduct in the way of declaration. The circumstances of Belfast were peculiar, and

required deep consideration. It was quite premature as yet to ask intending members to be members of the Institute in Dublin, but in many ways it was desirable that the local society should be affiliated to that Institute. Mr. W. J. Fennell moved the following resolution: "That, having regard to the lack of organisation of the architectural profession in Ulster, it is desirable that an association be formed, having for its objects the promotion of union and professional integrity amongst its members, the establishment, as far as possible, of uniformity of practice, and the general advancement of architecture; to consist of Fellows and Associates of the Royal Institute of British Architects and members of the Royal Institute of Architects, Ireland, together with such other competent members of the profession as may desire admission and be elected subsequently under a constitution and bylaws, which shall be framed by a council elected for that purpose and approved of by a majority of the members, that the constitution and bylaws be subject to the approval of the Royal Institute of Architects, Ireland, and the Association so formed be affiliated thereto and have official representation on its council." He said the objects were—first, the promotion of union; and in regard to that he thought there was exceedingly little union among architects in Belfast. At any rate, he had seen very little of it in his twenty-five years' experience. In reference to professional integrity, he thought that the members of the profession in the city were as upright and high-minded as in any other place. He considered that uniformity of practice was the cardinal point, and the whole thing meant 5 per cent.; although, at the same time, he agreed that the practice in Belfast was very different from that in other towns and cities. Mr. J. Gilliland seconded the motion, and said union in Belfast had been conspicuous by its absence, and disunion would be the more proper term to apply to it. He was not quite sure about the integrity of architects in Belfast, because he understood that the members of the profession took less than the recognised percentage. At the same time, he believed very little was done in the way of taking illicit commissions. Mr. W. Kaye Parry supported the resolution, which was cordially adopted. Mr. S. P. Close moved—"That a provisional committee be elected to prepare a scheme and report to a general meeting, correspond with the Royal Institute of Architects, Ireland, and take such other steps as it may consider desirable to promote the interests of the proposed association. That the following be the provisional committee: Vincent Craig, F.R.I.B.A.; J. J. McDonnell, J.P., M.R.I.A.I.; Frederick H. Tulloch, A.R.I.B.A.; William J. Gilliland, M.R.I.A.I.; John C. Dewhurst, A.R.I.B.A.; with Nicholas Fitzsimmons, A.R.I.B.A., secretary and convener." Mr. G. W. Crowe seconded. This motion was also carried unanimously. Mr. James St. J. Phillips moved: That this meeting hereby expresses its cordial approval of the resolutions passed by the council of the Royal Institute of Architects, Ireland, at its meeting of the 7th inst., as follows: "The council of the Royal Institute of Architects in Ireland, having had the result of the Presbyterian Assembly Hall competition, Belfast, brought before them, are of opinion that the conduct of the competition committee in not following the usual and proper course of publishing the report of their assessor (which they understand was an open document) and in appointing as architects to the new building the firm who drew up the original very unsatisfactory conditions, is deserving of their condemnation, as being absolutely opposed to the methods which should govern all fair and impartially conducted competitions. The council considered the proper course for the committee to have adopted was either to have given the work to the gentleman placed first by the assessor, in conjunction with a consulting architect of experience, or else to have invited a fresh competition, with more satisfactory conditions than the previous one." Mr. Nicholas Fitzsimmons seconded the motion. The Chairman, in putting the resolution to the meeting, said he could not do so, as the assessor of the competition referred to, without making some observation. It had been impossible, unsatisfactory, and distasteful, as were so many of the competitions in Belfast.

Mr. Thomas H. Mawson, the garden specialist, of Windermere, has opened London offices at No. 25, Conduit-street, near Bond-street, W.

BRITISH AND IRISH BUILDING STONES.—XIX.

YORKSHIRE.

THE rocks in this county are Chalk, Speeton Clay, Kimmeridge Clay, Coralline Oolite (237), Oxford Clay, Cornbrash, Kelloways Rock (110), Upper, Middle, and Lower Estuarine Beds (39, 69), Lias, Penarth Beds, Keuper, Bunter, and Permian Beds (6, 43, 171, 196), Coal Measures (5, 7, 40, 41, 54, 67, 78, 91, 95, 113, 126, 131, 132, 141, 150, 161, 172, 185, 190, 194, 195, 211, 213, 214), Millstone Grit (44, 107, 145, 170, 192, 199, 236), Yoredale Beds (105, 200), Carboniferous Limestone (248, 249, 251), Bannisdale Slate, Conistown Grit and Limestone, Basalt (66). There are extensive areas covered by Glacial Beds in this county, and although the oolitic table lands on the east are comparatively free from drift, the hill tops of the older strata on the west are glaciated to a height of over 2,300ft. above the sea level. The entire district known as Holderness, a flat country lying between the range of ancient chalk cliffs which trend inland from Bridlington Bay, by Driffield and Beverley to Hull and the North Sea, is built up with glacial beds from 20ft. to 100ft. thick, which rest on the denuded surface of the upper chalk. Strictly speaking, all the deposits found in this district are Glacial, Inter-Glacial, and Post-Glacial. The nature of the beds has been ascertained by borings, and good sections of portions of them may be seen along the coast, where they are divided into sections known as the Basement Bed, the Purple Clays, and the Hessele Beds. The Basement Bed is the lowest bed seen in the cliffs, hence its name; and between it and the Chalk there are deposits no less than 60ft. thick, which may include older Glacial strata or newer Pliocene rocks, similar to those found in Norfolk, known as Crag. The Basement Bed is a dark green or blue boulder clay, which contains green-coated flints, black flints (unknown in the Chalk of this county), boulders of oolitic sandstone, Carboniferous Limestone, and of basalt, granite, and gneiss, probably from Scandinavia! Boulders of the Speeton clay are numerous, but no Shap granite has been found in this division, though it is scattered over the northern half of Holderness. The Purple clay, divided into "Upper" and "Lower" by a few feet of gravel, is tough, and of a purplish brown colour, with much chalk in the lower beds and boulders of all the older rocks. Above the Purple clays are the Hessele beds, which consist of deposits of subangular gravel, which attain a much greater thickness at Hessele, four miles west of Hull. The Post-Glacial clays, sands, and gravels of Holderness are mostly the beds of ancient meres, now exposed by draining. Around York boulders of Shap granite are found in the Glacial clays, which rest here on Triassic rocks. Some of these were dug out of the foundations of the railway station. The Boulder clay of Holderness is used locally for brick and tile making; but it is necessary that all these clays be well washed for the purpose, to remove the chalk which is plentifully scattered through the beds. Humber warp makes good brick and tile clay; but the chief kilns in it are on the Lincolnshire side of the river, between Barton and Cleethorpes. The warp of the river Hull and its tributaries is stiffer and more carbonaceous than that of the Humber. There are no building stones in Holderness. Between the Glacial deposits and the Chalk there is a great gap in the strata of this county. The Woolwich Plastic clays, London clay, Bagshot sands, the Oligocene beds of the Isle of Wight, and the crags of Norfolk and Suffolk have no representatives; during the great period of time occupied by the deposition of the formations enumerated no rocks were laid down here. The chalk extends along the coast from Bridlington by Flamborough Head to Speeton, from which place it turns north to near Filey. Here it trends to the west at Settrington, and then south to North Ferry on the Humber. The eastern boundary of the Chalk is roughly defined by the Bridlington and Hull railway; the country occupied by the Chalk is generally known as the Wolds. The chalk here is usually excessively hard, the flints being greyish or white and splintery. "Paramoudras" are found at Flamborough. The Hunstanton Red Chalk is represented by a red band, which can be traced from Speeton along the west side of the Wolds and into Lincolnshire. It is curious to note that the red colour does not always coincide with the bedding, but sometimes cuts across it.

obliquely. The chalk is burned for lime and ground for whitening, the flints being used for walling and road metalling. The principal chalk quarries are Alden, Wilberby, Mr. W. Robson; Hessele Cliff, Messrs. Hearfield Bros.; Hessele Cliff, The Exors. of Mr. W. Marshall; Nafferton Wold, Mr. A. J. Wise; Queen's Gate, Beverley. The Queen's Gate Whiting Co.; Victoria Works, Westwood, Beverley, the Beverley Whiting Co. There are others at Garton-on-the-Wolds, Middleton-on-the-Wolds; Bents, Bishop Wilton; Blanch, North Dalton; Blubberdale; Cottam Bottom; Fimber; Sledmere; Wetwang; Huggate Hill Top; Kilham; Driffield, and many other places. The Speeton Clay is the only deposit of the same age as the Lower Greensand and Wealden Beds of the Southern Counties, or, to compare it with rocks with which the builder is more familiar, this clay is the Yorkshire representative of Kentish Rag, Bargate Stone, Tunbridge Wells Sandstone, and Sussex Marble! Speeton Clay is seen in sections along the coast north of Flamborough Head, where it is composed of blackish and dark-blue clays, with regular layers of septaria, also phosphate nodules and pyrites. The clays extend inland to Knapton; they are worked for brickmaking, and the septaria are, with some of the light-coloured clays, sent to Hull for the manufacture of cement. Kimmeridge Clay, the only division of the Upper Oolites found here, is mainly composed of alternations of finely laminated dark bituminous and lighter shales, with brown bands, in the upper part; and blue clays and shales, much lighter in colour, and not so finely laminated, in the lower part, which is noted for the septaria which it contains. The clays are seen along the coast at Filey Bay, and they form low hills at Ebberston, West of Pickering. Sections of beds may be seen in the railway cuttings. The shales were worked for brick and tile making at North Grimston, and at Birdsall; but at the latter place they were found unsuitable for the purpose. The Middle Oolites in Yorkshire are arranged thus in descending order:—(1) Upper Calcareous Grit, (2) Upper Limestone and Coral Rag, (3) Middle Calcareous Grit, (4) Lower Limestone, (5) Passage Beds, (6) Lower Calcareous Grit, (7) Oxford Clay, and (8) Kelloways Rock. All the oolitic rocks are found in the north-east of the county, occupying an area roughly circular and about 35 miles in diameter; they underlie the moors, and from the coastline from Filey Bay to the north of Whitby, with the exception of a narrow band of lias, which cuts them off from the sea between Robin Hood's Bay and Runswick Bay. The Upper Calcareous Grit is a soft, rubbly, ferruginous, brownish-red sandstone, containing large calciferous "doggers" in the neighbourhood of Helmsley. In the quarries along the west side of the Vale of Pickering this rock is known by quarrymen and builders as the "red rock." In the Howardian Hills and at Kirby Moorside, which stands on this Upper Calcareous Grit, there is a subdivision, which consist of a peculiar argillaceous limestone, known locally as "Cement-stone," or sometimes as "Throstler." At North Grimstone this is quarried by the Malton and North Grimstone Lime Co. Here the formation consists of bands of argillaceous limestone with partings of calcareous shale in regular layers something like the lias of Glamorganshire and Monmouthshire. This Cement-stone is developed to a limited extent only, and there are several quarries along its outcrop where stone is raised for farm buildings and rough walling. At Langton and Birdsall the rock breaks up short and flaggy. Wharrah Church was built of this stone, because "it was the nearest available." The upper Limestone and Coral Rag, worked at Crossgates and Aytoun quarries for several years, consist of from 6ft. to 8ft. of Rag overlying a brashy oolite which rests on 20ft. to 30ft. of more solid oolitic limestones. The thickness of the Rag, which is worked for road metalling, varies much in the different quarries. There is an important quarry in these rocks at Pickering, worked by Mrs. Kirby, where the stone is used for lime-burning, and sent to the blast-furnaces as a flux for iron ore. A section in the Pickering quarry shows the following beds:—(1) Upper Calcareous hard-grits; (2) "Throstler," a very hard argillaceous limestone, which has a conchoidal fracture, 3ft.; (3) "Top Stone," a grey ferruginous limestone, 5ft.; (4) "Black Posts," impure earth limestones, 10ft.; (5) compact sub-oolitic limestone, 20ft.; (6) variable limestones, pisolites, roadstone, 13ft.; and (7) solid blocks of calcareous grit. The Middle Calcareous Grit consists of alternations of

sandy and calcareous strata more or less oolitic. This rock is quarried at Thornton Dale for the freestone beds in it. There is a well-known quarry at Pickering, where, in the lower part of the quarry on the eastern side the following beds are found: (1) Solid beds of limestone, 5½ft.; (2) rubbly oolite, 4ft.; (3) thick irregular bed of limestone, 2½ft.; (4) oolitic blue-centred limestone, 4ft.; (5) thin bed, 1ft.; (6) smooth limestone, 1ft.; (7) impure limestone, 5½ft.; (8) soft yellow freestone, 11ft. The upper beds here are probably of the "Upper Limestone" series; there the beds are very variable, and no two sections are alike. They may, however, be generally described as an irregular series of sandstones and calcareous beds in which sandstone largely predominates, especially towards the lower part, in the upper part calcareous bands or irregular lenticular masses of impure limestone gradually pass upwards into the "Upper Limestone." This division is quarried at Filey Brigg, Pickering, and Wass Moor. The Lower Limestones are found in the Tabular Hills, Howardian Hills (part of), and in the Hambleton Hills; they are also found at Scarborough Castle, and Hackness. These rocks are a whitish oolite of fine texture, with softer and more earthy partings, the lower part; being usually flaggy and silicious. There are various quarries from Kingsthorpe to Cropton, the most important being Caulklands in Thornton Dale. North of Seamer station there are quarries at Waydale House, Irton Moor, and in Forge Valley. Generally speaking, though the Upper and Lower Limestones are soft and friable, they are occasionally used for building. The Hildenly stone, a true Coral Rag, is an exception; it is a fine-grained limestone, suitable for carving and internal work. Castle Howard Chapel was built with it, and the same stone was used for the internal mouldings at Kirkham Abbey, which are in good condition, though now exposed to the weather.

The Passage Beds are quarried for rough walling. At Hackness they yield what is known as the "Wallstone," a coarse, rubbly stone which splits into large slabs; it is really a fissile calcareous sandstone. The same beds are seen north of Ebberston and Snainton and in Thornton Dale. They outcrop along the northern part of the Tabular Hills between Hackness and Kirkdale. The Lower Calcareous Grit is a massive yellow calcareous sandstone, which is employed for building along its outcrop from the coast at Scarborough to the Hambleton Hills and along the Howardian Hills. The rock is thinner and harder in the Howardian Hills than along the Tabular Range, consequently the most important quarries are in the southern outcrop. Some of these are Park Quarry, Castle Howard; Brows Quarry, Malton; and Birdsall Quarry. The stone raised here was used in building many of the old churches in the locality, it was also used at Castle Howard. The Lower Calcareous Grit becomes shaly as it passes down into the Oxford Clay, which latter formation attains a thickness of from 120ft. to 150ft. along the coast at Castle Hill, Scarborough, Gristhorpe Cliffs, &c., but is much less inland. The lower division of the Oxford Clay—viz., the Kelloways Rock, consists of variable beds of sandstones, calcareous grit, and shale. It is seen at Scarborough, Cayton Bay, Newton Dale, Core, Hackness, &c., and has been quarried extensively for some of the best freestones in the district. Still the area yielding stone compact enough for building is limited. Kelloways Rock was used in Hackness Church and Hall, and York and Scarborough Museum; but it is not extensively quarried at present. Lord Derwent's quarry at Low Dale-road, Hackness, is worked by his agent, Mr. S. Little, and there is a quarry at Levisham. In the valley of the Riecal, the Kelloways Rock is very massive, and the beds here would probably yield good building stone. The Great Oolite has only one representative here—viz., the Cornbrash. It is not of much economic value, although it has been quarried in Gristhorpe Cliff, and sent to Hull for the manufacture of cement. In this county the Cornbrash is a grey, rubbly, hard ferruginous oolitic limestone, becoming softer and more earthy in the lower parts, and finally passing down into calcareous shales. At Gristhorpe and Scarborough the Cornbrash is from 2ft. to 15ft. thick, and it is well developed in Newtondale, where its ferruginous appearance induced a speculator to work it for iron! The Lower Oolites in this district are mainly composed of a great thickness of estuarine and freshwater beds, which are separated into three or four distinct

groups by thin marine bands; the beds run into each other, and cannot be distinguished when these bands are absent, as they frequently are. The Inferior Oolite of Yorkshire differs, therefore, altogether from that of Dorset, for the latter consists almost exclusively of marine deposits. A complete set of the Yorkshire Lower Oolites is as follows:—(1) Cornbrash, (2) Upper Estuarine, (3) Scarborough or Grey Limestone, (4) Middle Estuarine, (5) Millepore series, (6) Lower Estuarine, and (7) Dogger. Nos. 2, 3, 4, 5, and 6 are representatives of the Lincolnshire limestone, and the Doulingstone of Somersetshire. The sandstones of the Lower Oolites are much coarser in texture and more massive in structure than the Middle Oolitic rocks already described; hence they are more suitable for outside work and where great strength is required. The Upper Estuarine Beds consist chiefly of shale, with bands of ironstone, carbonaceous matter, and irregular beds of false-bedded sandstone. At the base of the series there is an important bed, called "Moor Grit," varying in texture from a fine-grained sandstone to a coarse grit, which is worked in many places. The best-known quarry is that at Cloughton, in the occupation of Mr. Thos. Petch, contractor; the quarry at Old Ford, at the head of Riecal Vale, furnished Moor Grit for building the bridges on the Helmsley branch of the N.E. Railway. At Sneaton the grit splits into slabs of great size, making a good flagstone, which may be seen on the quays at Whitby. The Scarborough or Grey Limestone is blue-grey and shaly, with ironstones and sandstones, though it can scarcely be called a building-stone. A silicious variety quarried at Brandsby was formerly worked for roofing slates; it was also used in building the pier at Scarborough, but is now quarried chiefly for road metalling. The Middle Estuarine Series are shales and sandstones, with seams of coal; the sandstones swell out to a great thickness at Hayburn Wyke, where they have been quarried for the clock-tower in the railway station at Scarborough. The Millepore Beds are impure limestones in Gristhorpe Bay; nearer Scarborough they are laminated and arenaceous, and they are still more sandy at Cloughton Wyke. Generally the beds are rough strong stones, and they have been used in Scarborough Pier, for which class of work they are most suitable. The Whitwell Oolitic Limestone is correlated with these beds, and also the Cave Oolite—a soft sandy oolitic sandstone used in the neighbourhood of Brough and the Hull Docks. The stone was used extensively in the old monasteries of Holderness. The Lower Estuarine Beds crop out along the coast from Staintondale northwards, and curving round to the west occupy a large area of moorland. These beds have been quarried in several places, the "Great Sandrock" at the base of the series yielding the best building stone. The quarry at Aislaby, worked by Messrs. W. Langdale and Son, is one of the best known. The "Sandrock" has been used in Whitby Abbey, Guisborough Abbey, and Mount Grace Priory, and recently in the foundations of Waterloo and London Bridges, Covent Garden Market, and the piers at Margate, Ramsgate, and Whitby. Some of the Lower Estuarine Beds yield a cement-stone at Terrington which has been burnt for lime, and they may be generally described as alternating beds of sands, false-bedded sandstone, shale, cement-stone, ironstone, and then impure coal. The "Dogger" consists of yellow sandstone, sand, and ironstone, the latter containing about 50 per cent. of iron, for which the beds have been worked; it yields no building stone. At the base of the Dogger Beds there are grey sands and sandstones, with sandy shales, known as the Blue Wyke Beds, which pass down into the Lias, and probably represent the Midford Sands of Somerset.

(To be concluded.)

WALSOKEN CHURCH INTERIOR.

[WITH LITHOGRAPHIC ILLUSTRATION.]

THIS water-colour drawing (exhibited by the authorities of the Royal College of Art at the Paris Exhibition) is by Miss Mary S. Peck, of Wisbech, who was awarded a National Bronze Medal. The church is a handsome example from one of the richest architectural districts in Norfolk; it is dedicated to All Saints, and has a nave and north and south aisles, with a chancel covered with lead. At the west end is a handsome ornamented tower, with a spire of freestone. The

nave of the church is divided from the aisles by seven handsome semicircular Norman arches on each side, ornamented with the chevron carvings. Over the pillars is the like number of windows, with emblems of the Twelve Tribes of Judah underneath. The roof is supported by carved work, decorated with figures of angels placed in the niches. A very beautiful and elegant Norman arch separates the nave from the chancel, which is about 10ft. in length. The aisles extend the whole length of the church to the extremity of the chancel, though separated by a screen on each side where the arch dividing the chancel from the nave commences, and as there were formerly several guilds associated with the church, it is not improbable that the chapels or chantries were held within these divisions. The screen now placed at the east end of the nave south aisle is a particularly beautiful piece of oak work deserving of the closest study, for its details are exceptionally refined. In our issue for Jan. 27, 1899, we gave a companion double-page illustration, showing the interior of this fine church, but looking west instead of east; also from a National Bronze Medal drawing, by Miss Mary S. Peck. A detail sketch of the font and of the choir-stalls was published in the BUILDING NEWS for August 23, 1889.

CHIPS.

Services were held in the parish church at Helpston last week for the purpose of dedicating a new chancel floor. The new floor, from the chancel arch to the Communion rails, has a central walk formed of squares of slate and Ketton stone; within the sacrum there are slabs of black-and-white marble in squares; and at the ends of the Communion table are panels of Rust's vitreous mosaic, containing the letters Alpha and Omega. It was designed by Mr. E. C. Traylen, A.R.I.B.A., of Stamford, and has been laid down by Mr. Dan Crowson, of Helpston. Mr. Roberts, of Stamford, supplied the materials.

The first portion of Christ Church Cathedral, Newcastle, N.S.W., is about to be constructed. The architect is Mr. J. H. Buckridge, of Sydney.

Roumania's impetuosity has led to the sacrifice of her peerless oak forests. A contract has just been entered into for the cutting of half a million oaks under disastrous conditions. Every tree with a diameter of half a yard and above may be felled, the uniform price to be about 12s. per tree, and the contractor to have the option of rejecting one-fourth of the trees having only the minimum diameter of half a yard.

At a cost of about £900, the four-manual organ at St. John's Church, Torquay, has been reconstructed by Messrs. Hale and Son, who built the instrument in 1873. Tabular pneumatic action has been supplied to the organ throughout, reeds and other stops have been revoiced, and two hydraulic engines have been provided to blow the instrument. Reopening services took place last week.

German sculptors have been invited to send in designs for the monument in Berlin to Richard Wagner. The committee has resolved to divide £1,000 amongst the authors of ten designs, from which a final selection will be made. The total cost of the memorial, which is to be of marble, is to be within the sum of £5,000. The Kaiser has selected the site, and the monument, by his desire, will correspond with those already erected to Goethe and Schiller in the Tiergarten.

The tallest chimney in America is being erected at Constable Hook, Bayonne, N.J. The stack is being put up by the Oxford Copper Company, whose plant adjoins that of the Standard Oil Company, to carry off the smoke and gases from its furnaces. The stack itself has a base of 30ft. square for an equal height. Above this point the chimney is round. It is to be built up to a total height of 360ft.—thus falling short by more than 100ft. of the famous chimney at St. Rollox, Glasgow. The diameter at the top will be 10ft. The weight of the stack is to be 20,000 tons, and the cost of erecting it will be in the neighbourhood of £10,000.

On Tuesday week a new Wesleyan church which has been erected at the junction of Wednesbury and Darlaston roads, Walsall, was formally opened by Mr. E. Horton, of The Grange, Bescot. The new building, which is Gothic in style, has been designed by Mr. C. W. D. Joynton, of Wednesbury, and accommodates between seven and eight hundred worshippers. The total cost will be about £7,000. Internally the church is seated with light oak open seats and is open-timbered, with a gallery at the end opposite the pulpit.

At a general meeting of the Royal Institute of Painters in Water-Colours, Piccadilly, held on Monday evening, Mr. Yeend King was elected vice-president in the place of the late Mr. E. M. Wimperis.

OBITUARY.

WE regret to announce the death, at the advanced age of 87 years, of Mr. JOHN BURNET, F.R.I.B.A., the senior member of the firm of Messrs. Burnet, Son, and Campbell, of Glasgow, and father of Mr. John J. Burnet, A.R.S.A. Among his works are the General Infirmary at Glasgow, and the Merchants' House, the Stock Exchange, the Clydesdale, National Savings, and Union Banking premises in the same city, and many country houses including those of Auchendune, Arden, and Kilmalen, all in Dumbartonshire; Newfield in Ayrshire, and Balmaghie in Kircudbrightshire. We gave a portrait and biography of Mr. Burnet in our issue of May 16, 1890.

FREDERICK CLARKE WITHERS, for many years a well-known architect in the Lower Hudson Valley, died at Yonkers, N.Y., on January 7. He was born and educated as an architect in England, where, indeed, he practised for some years before coming to the United States. He practised at Newburgh until the Civil War, in which he served as an officer of volunteers until obliged to resign from disabilities received in service. He then resumed his architectural practice, with offices in New York and his home in Yonkers. He designed many noteworthy structures, among them the Jefferson Market Court House in New York.

At Rochdale police-court on the 10th inst. Messrs. Peters and Son, builders, Townhead, were fined 10s. and costs for failing to report to the Inspector of Factories, under the Factory Act of 1895, an accident to one of their workmen, J. Nuttall, while engaged on some buildings in course of erection at Messrs. John Bright and Brothers' mill, Fieldhouse. Defendants pleaded that the masters had not heard of the accident until the injured workman sent in a claim for compensation five weeks after the occurrence.

For the purpose of extending their gas undertaking and for other minor purposes, the Burton Corporation desire to raise £22,080, and on Wednesday week Lieut.-Col. A. C. Smith, R.E., one of the Local Government Board's inspectors, held an inquiry into the application at the town-hall of that borough.

Messrs. R. Aitkenhead and Sons, builders, Greenock, on Saturday received an intimation from the Government that their offer to erect a new fort at Ardhallow Dunoon, on the Clyde, has been accepted, the price being £16,000. The same firm are at present erecting a fort for the Government at Kilcreggan, also on the Clyde.

The death occurred on Friday of Dr. Sedgwick Saunders, who for the past twenty-six years had been the medical officer of health of the City of London and the public analyst. Dr. Saunders had been responsible for the introduction of many of the most important sanitary reforms the City has undertaken in the past quarter of a century.

At the last meeting of the Chiswick District Council a letter was read from Mr. J. Passmore Edwards, saying that he thought the memory of Hogarth should be commemorated in the district where he had lived and worked, and he would, therefore, be glad to place a marble bust of him in the new Chiswick Town-Hall. The offer was accepted with thanks.

Mr. R. H. Bicknell, M.Inst.C.E., held a Local Government Board inquiry at the Wakefield Town Hall, on Monday, as to the proposal of the corporation to purchase and close fifteen houses in different parts of the city, and to erect artisans' dwellings on a piece of land near the sewage and electric works. The property to be acquired is for street improvements in Drury-lane, Marygate, and Warrergate. Subsequently an inquiry was held by Mr. Bicknell as to the expenditure of £3,500 for works of sewerage.

Some discussion took place at Tuesday's meeting of the London County Council on a recommendation by the Asylums Committee that the estimate of £39,000 submitted by the Finance Committee for the erection of buildings, &c., for an epileptic colony on the Horton Estate, for the accommodation of 300 insane male epileptic patients and staff, be approved. It was complained that the cost per head of the buildings, originally estimated at £220 per head, had now risen to £308, the explanation given being the large increase in building materials and wages. The recommendation was eventually adopted.

A new Baptist chapel was opened in Brynland-avenue, Horfield, Bristol, on the 16th inst. It has been built from plans by Messrs. Drake and Pizey, of Bristol, selected in competition, and is Perpendicular in style. Mr. R. F. Ridd was the builder. The cost has been £11,440.

Engineering Notes.

A visitation was made by the members of the Edinburgh and Leith Gas Corporation to the new gas works, Granton, on Friday, to see the progress of the works. Mr. Herring, engineer, gave explanations of the uses to which the various buildings would be put. The buildings near the seashore, where the residuals will be treated, are all but finished, and steam-engines, stills, and other apparatus for the treatment of the ammoniacal liquor are all in their places and ready to be started. This part of the gasworks has been specially built to comply with the requirements of the Alkali Acts. Another section of the work well advanced is the gigantic circular pit for the reception of the gas-holder. This huge excavation and construction, which is 252ft. in diameter by 38ft. deep is all but finished. Its sides are lined with brick, behind which is a wall of clay 15in. in thickness. The floor has also been treated in a similar manner, though the clay there has been covered with a thick layer of concrete. The tank is thus quite water-tight. The erection of the gas-holder will be immediately commenced. The uprights and plates are already on the ground. The holder will be telescopic in form, in four lifts, and when inflated will rise above the top edge of the tank 153ft., and will have a storage capacity of 6½ million cubic feet of gas. This is about equal in capacity to all the other holders in Edinburgh and Leith put together. It is expected to be finished about the end of September. The gas will be drawn along the pipes from Edinburgh to Granton by suction-fans, which, acting reversely, will send it back again as required by the city. There are to be six gas-holders of the same size at Granton, which will give a storage capacity of about 400 million cubic feet. A visit was also made to the retort-house and coal-store. Of the first of the retort-houses the walls of brick have been built, and the floor of solid concrete has been laid, while the iron girder roof is in position and some progress made in the covering of it in. This building is 386ft. long by 100ft. span, and in it will be placed nine retorts with 504 furnaces. The coal-shed, which is separated from the retort-house by a double line of rails, is of brick, with iron roof 500ft. long by 100ft. wide. It will store a reserve of about 18,000 tons of coal, and there will be also bins outside for coals not easily affected by wet. On the west side of the coal-store the retort-house just described will be duplicated.

The partnership hitherto subsisting between P. M. Faraday and H. J. Rodgers, architects, Chancery-lane, W.C., under the style of Michael Faraday and Rodgers, has been dissolved.

The name of Mr. Tom Winteringham, timber merchant, had been placed on the Commission of the Peace for Grimsby, but Mr. Winteringham has intimated to the Lord Chancellor that he declines to accept the honour.

At Blackpool, on Monday, Mr. A. P. Trotter held an inquiry with reference to the application of the council for the sanction of the Board of Trade to the borrowing of over £82,000 for the construction and electrical equipment of new tramways round the district of Marton. The tramways cover about two miles, and are expected to be ready for the Blackpool season.

Messrs. Richardson, Westgarth, and Co. have decided to make considerable improvements and extensions at their engine works, Hartlepool. Plans have been approved for taking in almost the whole of the vacant land between Sea Terrace, Middleton, and the high-water line, and it was stated that plans are also in course of preparation for the erection of new offices, the cost of which will be about £10,000. A tramway is to be constructed to connect the main portion of the works with the new extension.

A central home for children is about to be built in Street-lane, Moortown, for the Leeds Board of Guardians. It will be built of red bricks and tiles, and will accommodate 45 children at a cost for erection of £7,500. Mr. Percy Robinson, of Leeds, is the architect, and Mr. J. T. Wright the chief contractor. The foundation-stone was formally laid on Friday last.

A dwelling-house on Fifth-avenue, New York, less than 28ft. wide, was recently sold for nearly 300,000dol. The high price that it brought is attributed to its being, as nearly as possible, fire-proof, its construction being practically the same as that of a modern office building.

Building Intelligence.

BANCHORY, MIDDIEMSIDE.—A sanatorium to be known as Nordrach-on-Dee has been built at Banchory for the purpose of carrying out the open-air treatment of consumption and other forms of tuberculous and lung disease. This is the first establishment in Scotland specially designed and erected on a specially-selected locality for carrying out the Nordrach treatment. It has been erected at a cost of over £600 per bed. The grounds extend to about 25 acres, and the lengths of the walks are graded according to the strength of the patient. Shelters are erected here and there among the trees, some of them being on the revolving principle. A winter garden is to be provided in the verandah that connects the sanatorium with the dining-room. The sanatorium has accommodation for 40 patients. The building, which was designed by Mr. George Coutts, architect, Aberdeen, after a visit to Germany with Dr. Lawson, has cost about £21,000, including the purchase price of the site.

ROCHDALE.—The school buildings which have been erected at Heybrook, by the Rochdale School Board, were opened on Saturday. The schools have been built at a cost of £18,000. They are in three departments, and accommodation is provided for 1,120 scholars, divided as follows:—Infants, 260; junior mixed scholars, 300; and senior mixed scholars, 560. The buildings are of two stories, with a frontage of 195ft. to Park-road. The length of the buildings in the rear is 215ft. The infants' and junior mixed departments are on the ground floor, the senior scholars occupying the whole of the upper portion of the school. A special feature is that the upper rooms are reached, in place of the usual staircases, by inclined ways, having a gradient of one in eight. A central hall is provided for each of the departments on the ground floor, with classrooms. Above there is one large central hall, with classrooms on three sides. Provision is made for the teaching of cookery and drawing in special apartments. Electric light is employed throughout. Facilities are provided for increasing the accommodation so that 110 additional scholars may be taken in. The plans have been prepared by Mr. T. Townend, and the principal contractors are Messrs. W. A. Peters and Sons, all of Rochdale.

SOUTHAMPTON.—The Central District Board Schools at Southampton were formally reopened the other day. The schools have undergone extensive alterations and additions. The school originally for boys and girls was a two-story building accommodating 598 children, and the infants' school was a one-story building accommodating 300, or a total of 898. In order to avoid buying a site for another school to cope with the increased accommodation required, a daring and somewhat novel proposition was agreed to, that the roofs of the buildings should be raised, and the necessary accommodation provided in that way. The boys' and girls' school had an additional story put on, making it a three-story building, and the infants' school had an additional two stories put on, thus making that a three-story building, and the two buildings coupled together, making it one huge building, the infants being on the ground floor, the girls on the first floor, and the boys on the top floor. The roofs were lifted bodily, and the work carried up to them. The area of the boys' and girls' school roof was 3,900ft., and the infants' school 2,300 ft. The increased accommodation given is for 759 children, or a total now the building is complete of 1,657. The total cost of the additions, including furniture and contingencies, is £11,352. The work was very successfully carried out without the slightest mishap to the huge roofs. The architect was Mr. John H. Blizard, F.S.I. (Lemon and Blizard), and his clerk of works Mr. S. Jurd. The builders were Messrs. H. Stevens and Co., of Southampton.

THORNTON HEATH.—The Ecclesbourne-road Schools, Thornton Heath, erected for the Croydon School Board, were recently opened. The present accommodation is for 1,200 children in three departments, and future extensions are provided for. The infants' school is a one-story building, and comprises a central hall, 69ft. by 25ft., seven classrooms, and teachers' room. The boys' and girls' school is a two-story building, the boys on the ground floor and girls above. Each department comprises a central hall, 79ft. by 30ft., with a class for fifty at each end, and

five classrooms for sixty each, two cap-rooms, a teachers' room, store, and two entrances; and the upper floor is approached by two staircases. The upper floor is constructed of steel girders and concrete, thus being fire and sound resisting, and this treatment permits of solid wood floors, formed with 1½ in. pitch-pine blocks, being used throughout all the schools. The external walls are built hollow, 16in. thick, faced externally with red Leicestershire bricks and Derbyshire stone dressings, the roofs being covered with red Staffordshire tiles. Internally the walls are lined dado high with golden-brown glazed bricks, and the upper part rendered in cement, and coloured with a washable distemper. The woodwork is of yellow deal stained and varnished. Instead of the usual type of lavatory basin in the cap-rooms, a marble lavatory trough of special design is provided. Incandescent gas lighting is provided by a special form of burner introduced by Messrs. Wm. Sugg and Co., of Westminster. The heating is by low-pressure steam, working at about 22lb. pressure, and is generated from two boilers in a basement under the large school. The builders' contract amounts to £15,534, or about £13 per head. Mr. H. Carter Pegg, A.R.I.B.A., Thornton Heath, is the architect. Messrs. Wm. Smith and Son, of Broad Green, Croydon, are the builders, and Mr. T. W. Tester has acted as clerk of works. Under a separate contract, amounting to £732, the Bennet Furnishing Company, of London, have supplied all the furniture, which is executed in Orham Canadian hardwood.

CHIPS.

A large clock has just been erected upon the church tower, Bishopstow, Wiltshire, which strikes the hours and shows time on a large dial facing west. It has been made to Lord Grimthorpe's designs by Messrs. John Smith and Sons, Midland Clock Works, Darby. The same firm are making a large clock for St. Michael's Church, Bournemouth.

A technical school for girls is in course of erection at Radbrook, near Shrewsbury, at a cost for site and buildings of £9,000. The buildings are faced with terracotta with stone dressings, and occupy a site of nearly 10 acres of land. The architects are Messrs. Dalgleish and Dickens Lewis, and the contractors the executors of the late Mr. J. Gethin, of Shrewsbury.

A Local Government Board inquiry was held on Tuesday at the Town Hall, Yarmouth, before Mr. E. P. Burd, with reference to the provisional order the corporation is promoting, under which powers are sought to expend £20,000 in the reconstruction, maintenance, and regulation of Wellington Pier.

There was a slight increase in the amount of business transacted at the Tokenhouse-yard Auction Mart during last week, though some heavy dealings in gas stock were again responsible for the bulk of the total realisations, which amounted to £58,185. A large number of small leasehold properties in East-end districts found ready purchasers, but the prices obtained were not above the average.

Mr. James Ellis, who represented the Bosworth Division of Leicestershire in the Liberal interest from 1885 to 1892, died at Leicester on Sunday, aged 71 years. He was a well-known member of the Society of Friends, and was the head of a large firm of quarry proprietors.

Major Druit, R.E., of the Board of Trade, inspected the new electric tramway line running from Wigan to Martland Mill Bridge, on Saturday. He was accompanied by the borough engineer (Mr. W. Bolton), the electrical engineer (Mr. H. C. Bishop), and members of the corporation. The line in question, which has cost about £14,000, is only part of the electrical scheme in contemplation. The money to be expended on the whole will be £150,000, and practically all out districts will be served with the tramway.

A Local Government Board inquiry was held at Bournemouth, on Wednesday and Thursday in last week, by Mr. Herbert C. Law, M.I.C.E., with respect to the proposals made by the Bournemouth County Borough to alter its area so as to include the urban districts of Pokesdown and Winton, the parish of Southbourne, and part of the parish of Holdenhurst.

Evidence was heard on Wednesday, Thursday, and Friday in last week at the Windsor Hotel, Glasgow, in an arbitration with reference to the claim of £7,457 made by the Glasgow Iron and Steel Company as compensation for about seven acres of land acquired by the corporation to enable the North British Railway Company to lay sidings into the Provan Gas Works. Mr. Frank Burnet, architect, is arbiter for the claimants, and Mr. James Davidson, Corstorphine, for the corporation, while Sheriff Balfour is overman.

COMPETITIONS.

STIRLING.—The public library committee met on Thursday evening in last week to adjudicate upon the competitive plans for the library building. After hearing the report of Mr. G. Washington Browne, Edinburgh, the assessor, in regard to the same, the plan sent in by Mr. H. Ramsay Taylor, of Messrs. Leisels and Taylor, architects, 7A, Young-street, Edinburgh, was awarded first place. Premiums of 30 guineas and 20 guineas respectively were awarded to the next in order of merit—Mr. John Allan and Messrs. MacLuckie and Walker, Stirling. Mr. Hew Morrison, librarian, Edinburgh, has approved of the plan selected, and it is estimated that the work will be carried out for £6,000, the amount of Mr. Carnegie's gift.

PROFESSIONAL AND TRADE SOCIETIES.

EDINBURGH ARCHITECTURAL ASSOCIATION.—At the last meeting of this association Professor Baldwin Brown lectured on "Colour in Architecture." Colour could not, he said, be regarded as essential to architectural effect, though to certain forms of architecture it might add considerable aesthetic charm. Architecture was an art of form, and could express itself, as in the Craigleith stone structures of Edinburgh, the exteriors of Wren, or the interior of St. Front at Périgueux in France, without any aid from ornament or colour. A monumental building in stone, in which the outward aspect expressed the structure, and the surface texture was an index to the excellence of the material, was, after all, the highest achievement of the art. If the material of the fabric was in itself of a fine hue, this solved the question of colour in the most satisfactory manner; but an architect would think first of the quality of the building material and not of its tint, and so the principle was maintained. This could be held established in spite of the very numerous and beautiful buildings of all ages and climes, which depended largely for their effect on added colour. As a rule they were not of the most monumental materials, but exhibited veneers of marble or plaster over rubble or brick. In the case of these materials, as also of wood and iron, colour was a natural finish, and the most should be made of it. Plaster, as the most widely used of these secondary materials, needed special consideration. The highest form of its polychromy was the mural picture. The lecturer discussed the conditions of mural painting and its prospects in modern days, and the necessity for success of the co-operation of various artists skilled in different kinds of work was insisted on. It was a matter that concerned associations of master painters just as much as Royal Academies. The architect must, after all, be the presiding genius of the work. Especially would he have to see that where there was a colour effect in his own materials the decorative scheme of the paintings should correspond thereto. He had also, what was more important, to mark out the places where decoration in colour was to come. A vote of thanks was conveyed by the president (Mr. Henry F. Kerr) to Professor Baldwin Brown for his address.

On Friday the body of James Handscombe, builder, of Bishop's Stortford, was found in the river Stort at that town. The morning was very foggy, and it is presumed that he walked into the water.

The Parliamentary Committee of the Liverpool Corporation advise strenuous opposition to the Bill about to be promoted for the construction of the Liverpool and Manchester lightning express.

As a memorial to the late Mr. W. H. Smith, the Hon. W. F. D. Smith, M.P., has erected and furnished a hospital at Moretonhampstead, in Devonshire. It will be opened by Lady Esther Smith to-morrow (Saturday).

The National Association of American Master House Painters and Decorators will hold its seventeenth annual convention in Buffalo, N.Y., in February next, beginning on Monday, the 18th, and closing on Saturday, the 23rd. In connection with the convention will be held an exhibition of sketches, models, and photographs of decorative work, which is to be open to the public.

The City Court of Common Council have instructed their sanitary committee to report as to the most suitable site at the City of London Cemetery at Ilford for the erection of a crematorium, and to submit for approval plans and estimates of the proposed buildings.

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ILLUSTRATIONS.

NATIONAL MEDAL DESIGN FOR A COUNTRY HOUSE.—KING JOHN'S CHAMBERS, NOTTINGHAM.—NEW NURSES' HOME, DUBLIN.—WALSOKEN CHURCH.—GLASGOW ROYAL INFIRMARY.—ARNOLD'S MANSION.—A MANTEL IN BEDFORD SQUARE, N.Y.—"WAITT PLACE," BARNSTABLE, MASS.—A PAGE OF CHAIRS.
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Our Illustrations.

NATIONAL MEDAL DESIGN FOR AN AMERICAN COUNTRY HOUSE.

THE whole of the walls of this building are designed to be of rough-cast, with stone dressings for windows, chimneys, &c. The tops of chimneys to have five courses of thin sand-faced bricks. The roofs to be covered with red tiles with red ridge. All ironwork and woodwork to be painted in green tints. The ground floor windows to have iron casements and frames. All first and second floor windows to have wood frames and iron casements. Windows of chief rooms to be glazed with stained leaded glass in conventional forms. All other windows with plain square lead glazing. The central living-room hall, with main staircase from same to upper floor, furnishes the key to the arrangement of the interior. A portion to be ceiled at first-floor ceiling level, while remainder of hall forms an arched banding and music gallery overlooking the main hall. Opening out of this hall are drawing and dining rooms and owner's den. The two former are to have high panelled dados with deep painted frieze over, while private room is to be fitted with oak fittings of simple character, and with plain oak-boarded dado and painted frieze and open-timber ceiling. All the above rooms to have open fireplaces and ingles, as shown. Mr. Reginald T. Longden, of Burslem, is the author of the design, which, we understand, is to be carried out for a gentleman in America.

KING JOHN'S CHAMBERS, BRIDLESMITH GATE, NOTTINGHAM.

THESE buildings were built for Messrs. Mellors, Basden, and Mellors, chartered accountants, whose offices occupy the whole of the main front over the shops. A passage 8ft. wide, faced with white glazed bricks runs back the full extent of the buildings, with suites of offices and warehouses arranged on both sides. Mr. John Howitt, F.R.I.B.A., Bentinck-buildings, Wheeler Gate, Nottingham, was the architect.

THE ROYAL CITY OF DUBLIN NURSING HOME.

THIS is being erected in St. Mary's-road, the recreation ground of the Royal City of Dublin Hospital, Dublin. It will be remembered that the foundation stone of this home was laid on April 9, 1900, by H.R.H. Princess Christian of Schleswig-Holstein. It will accommodate thirty nurses, each having, not a cubicle, but a separate room and window. Partitions between the rooms are formed by the wardrobes and toilet arrangements, besides sleeping accommodation. There is on ground floor a large hall, an office, separate bedroom and sitting-room for matron, and a dining-room and large recreation-room for the nurses. Rooms are approached from a central well staircase, which is fireproof. There is good

lavatory and bath accommodation in a detached wing; large kitchen, &c., and servants' apartments, and it will be heated throughout with hot air and lighted by electric light. The building is of brick, faced with Ruabon brick and buff terracotta. Messrs. H. and J. Martin, of Dublin and Belfast, are the contractors. The whole is from the design and under the superintendence of Mr. Albert E. Murray, A.R.H.A., F.R.I.B.A., architect, 37, Dawson-street, Dublin.

WALSOKEN CHURCH INTERIOR.

(For description see page 120.)

GLASGOW ROYAL INFIRMARY.

ON the 11th inst. we published some views and plan of the design placed second by Dr. Rowand Anderson, the architectural referee in this competition, and to-day we give a detail of the Queen's Jubilee Block from the same designs, which was submitted by Mr. A. Hessel Tiltman, F.R.I.B.A., whose description of his scheme appeared with our previous illustrations.

ARNOLD'S MANSION, FAIRMOUNT PARK, PHILADELPHIA.

THIS typical example of Colonial Georgian work was erected in 1761, and about twenty years later belonged to Benedict Arnold, from whose name the house obtains its title. We give a view of the central entrance. The columns and pediment are of wood. The quoins are in brick, and the wall space is finished in stucco on stone walling. The roof at present is covered with modern tin. The house has a central hall running through from front to back, the staircase hall coming to the left-hand of the front entrance, and a parlour behind. On the right of the hall or central gallery there is one big room, and on the first floor are three bedrooms. Flanking the main block were two pavilions at a lower level, with high dormers and curved-shaped roof (square on plan), and consisting of two floors. The accompanying sketch of the entrance to the house proper given to-day is from the pen of Mr. Frank A. Hays. Measured drawings were made by Mr. Charles L. Hillman, and were published in a very useful and admirably produced folio under the title of the "Georgian Period," by the proprietors of the *American Architect and Building News*, whose publishing office is 211, Tremont-street, Boston, U.S.A. The publication is to be completed in twelve parts, and the first six are now before us. The second reproduction which we have made to indicate the style of work and draughtsmanship adopted is of a sheet by Mr. Frank E. Wallis representing a quaint old fireplace from Waitt-place at Barnstable, Mass., dated 1717. The upper portion of the drawing shows a chimney-piece in Messrs. Lamb and Riche's office, Broadway, New York, and found in a junk shop, N.Y. city. No further information as to its origin has been forthcoming. The plates are larger, of course, than our reduced copies, and they cover a great variety of subjects, many of which are very original and suggestive, designed in a style which has once more become very popular with several architects. The classification of the specimens brought together would take a long time, and there is no particular order adopted in the folios. We cannot attempt to do more than give a general idea of their contents. Mr. D. A. Gregg and Mr. E. Eldon Dean, both at one time resident in London, are among the contributors. The plates are accompanied by articles on colonial work in the Genesee Valley, at Sackett's Harbour, the Mappa House, Trenton, N.Y., Old Philadelphia Churches, Old Colonial Work in Virginia and Maryland, and Some Houses of the Washington Family. These papers are copiously illustrated by block illustrations in the letter-press from photographs and sketches. Many of these old buildings are wonderfully English in character, displaying as they do the last remnant of vernacular British architecture. The chimney-pieces particularly exhibit the style of the Adelphi Adam Bros; though some of the examples are perhaps more free than most of the work of that date to be seen in this country. Many of the typical porches might have come from some of our own historic towns, though there are, of course, some such, as the Shirley Mansion on the James River, Va., which look very unlike English originals. Shirley, inside, however, follows very closely the details of home work, in the parlours particularly. Formal gardens are to be noted, as at Mount Vernon, V., where there were a whole range of subsidiary buildings set in a row

in front of the mansion. The pulpits and other fittings of meeting-houses which will interest many who favour the Renaissance in its latest mode—such, for example, as King's Chapel, Boston, and the Seventh-Day Baptist meeting-place at Newport. In the historic shingle houses, good old English and Dutch furniture is still to be seen, while work of a richer type is represented by a grand piano made in New York in 1775, and some drawing-room cabinets. There are also a series of wood cornices and structural details, elevations of rooms and sections. The Philippe Manor House, Yonkers, N.Y., furnishes some specially good and refined designs, excepting the Guest Chamber, which is doubtful in taste. The old State House, Boston, looks like a street front from Holland. The City Hall, New York, and the Pennsylvania Hospital, Philadelphia, are among the larger and more important examples. We think we have indicated sufficiently how inclusive these folios are. Nothing that care can do has been spared to make the drawings useful and thoroughly practical for the use of the decorator and architect.

A PAGE OF CHAIRS.

THESE drawings of historic Chairs formed part of the series for which Mr. William L. Whelan, of Dublin, won a National Silver Medal at South Kensington last year. We shall give some more reproductions of the same set of studies, which cannot fail to be of interest to our subscribers. The French Armchair of the middle of the 16th century, shown to the left hand of our plate, is panelled and carved, with a shield and crest on the back. On the stiles of the framing the leaf carvings are typical of its period, and the rusticated jointings in imitation of masonry are not unusual. The seat lifts up, and forms a locker or box, the front being panelled in flush with the forelegs. In the right-hand corner of our plate is a drawing of a French Armchair in oak, of 17th-century make, with twisted and baluster bars. The example is exceedingly quaint in its design, with an uncommon arrangement of legs and an oddly-shaped seat. In height the chair is more like a modern music-stool, while the back is low in proportion. The original, which is most effective, is now at South Kensington, and belonged to the famous Payne Collection, of which we gave a notice in the *BUILDING NEWS* for July 19, 1895. The Portuguese Chair, with the high leather-covered and arched-top back, consists of a simple frame. The large nail-heads are enriched with arabesques stamped by a sharp die, and add much to the national character of the leather-work. The Venetian Twisted-legged Chair, dated about 1600, has a back and seat covered with *appliqué* embroidery. The twists are reversed on the bars, which have a collar in their middle. The carved Venetian Chair of contemporary date to the last is made up of two sculptured planks with a polygonal seat. The shaped carved pediment which surmounts the back is characteristic, and has perforated scroll-work below flanked by figures raking inwards towards the seat. Winged females support a cartouche on the front, the outline of the chair being somewhat over-decorated. The French Armchair of Louis XV. period is typical, and no series of historic chairs would be complete without an example of this kind. The same remark equally applies to the Shield-shaped Chair with cushioned arms and ribbed upholstery. It belongs to the Dublin Museum, and is of Louis Seize date. Figured sizes accompany some of these sketches, and will be found useful. The Curule-shaped Venetian Chair of about A.D. 1500 is inlaid with darker wood, and has ivory and white-metal inlay in the style of Bombay work. It is now at Dublin, and exhibits the revival of the art of inlay-work from Venice.

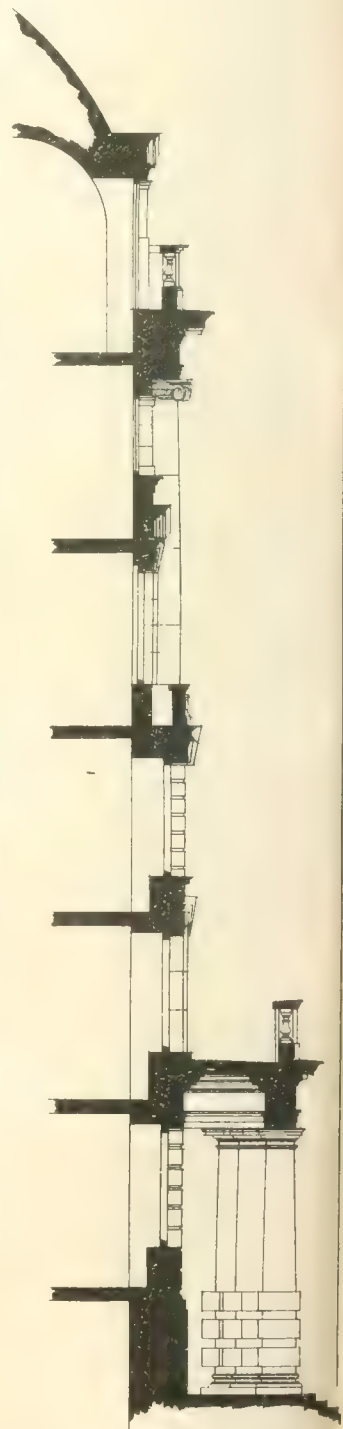
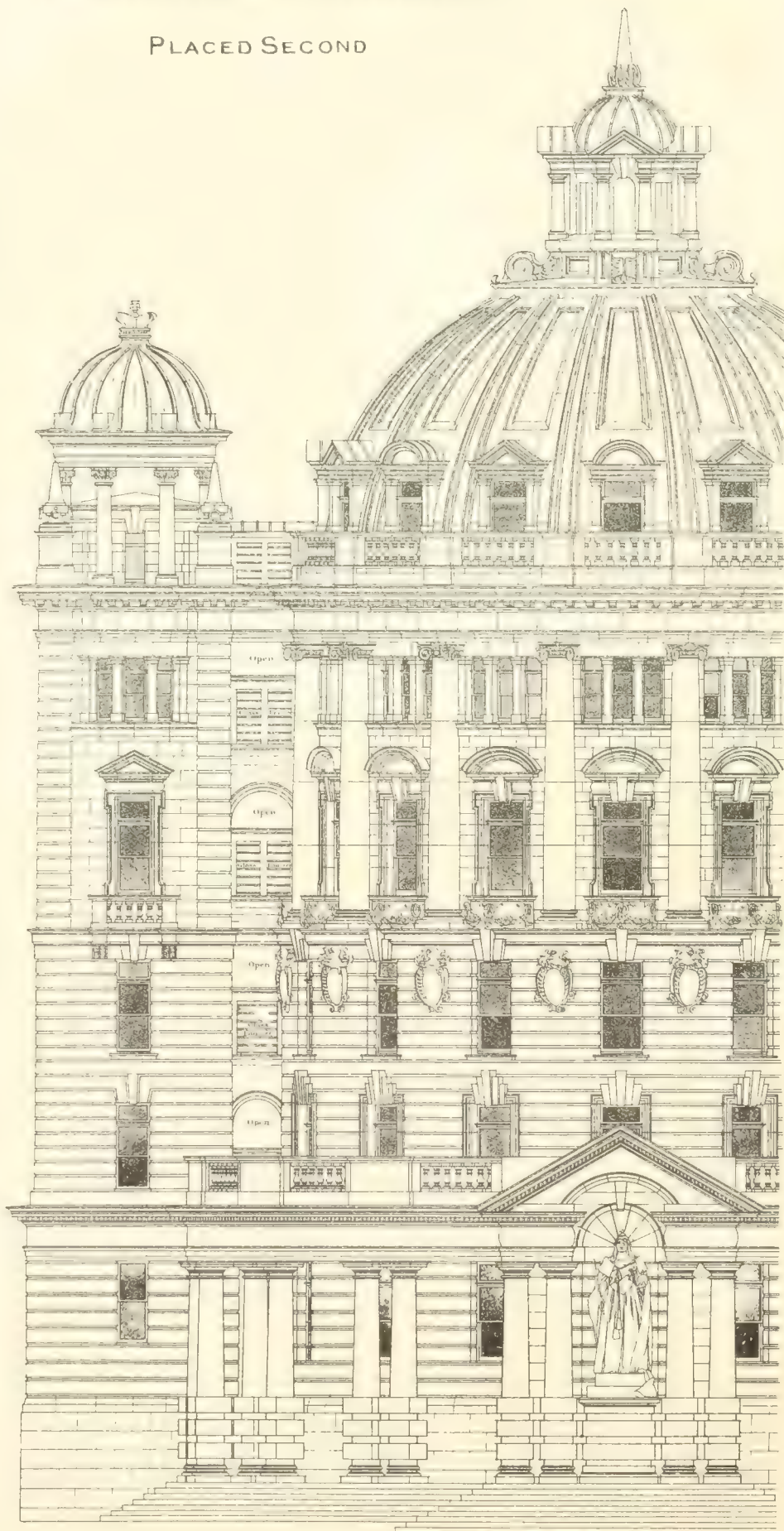
The city council of Truro have adopted plans by their city surveyor for remodelling and draining the cattle market at an estimated cost of £5,000.

A Bill will be promoted next session for the purpose of obtaining powers to construct a railway under the Solent, and thus give land communication between the mainland and the Isle of Wight. It is proposed to commence the line at Sway, Hampshire, by a junction with the Lymington branch of the London and South-Western Railway, and to terminate it by a junction with the Freshwater, Yarmouth, and Newport Railway in the Isle of Wight. The line will be worked entirely by electrical power. The capital of the company is to be £600,000.

• GLASGOW ROYAL INFIRMARY •

• DESIGN BY A. MESSELL TILTMAN, ARCHT. •

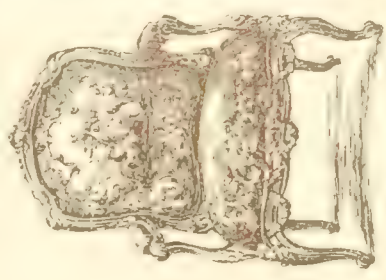
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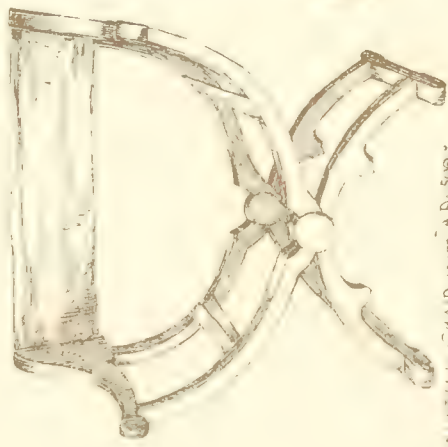
Detail of Queen's Jubilee Block
Elevation

Section

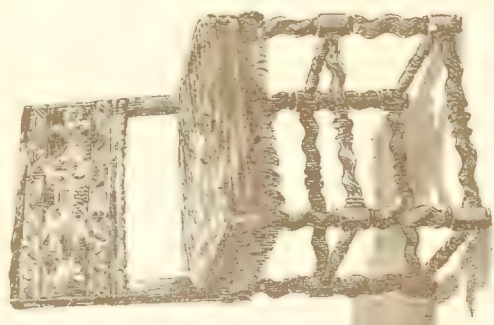




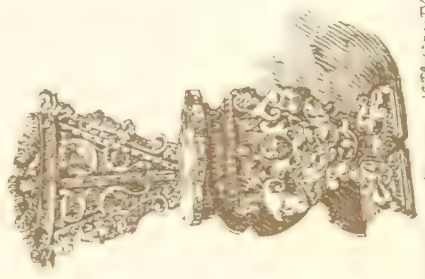
-FRENCH CHAIR LOUIS XV PERIOD-



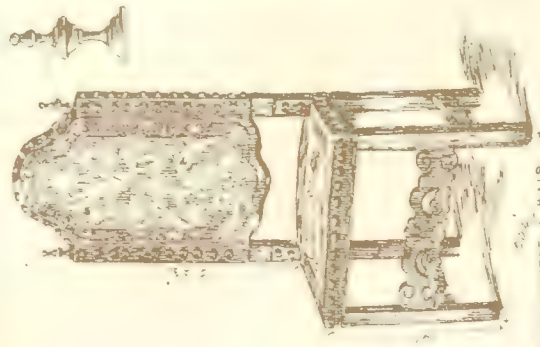
VENETIAN CHAIR ABOUT AD 1500



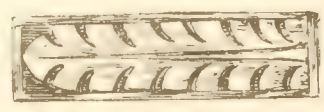
-VENETIAN CHAIR ABOUT 1600-



VENETIAN CHAIR 16TH CENTY.

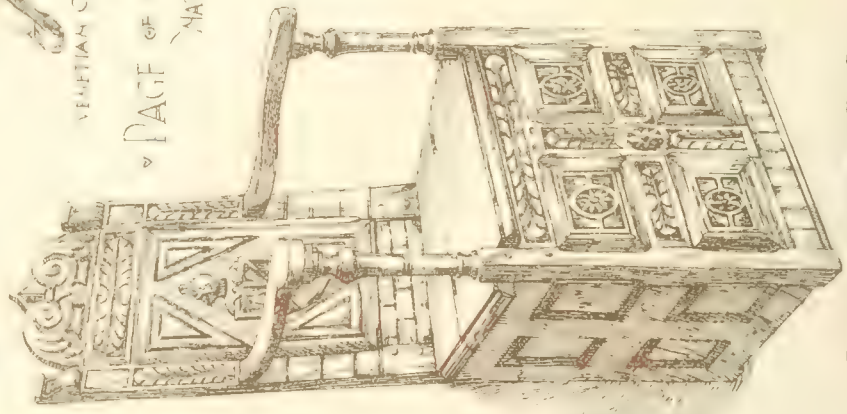


PORTUGUESE CHAIR

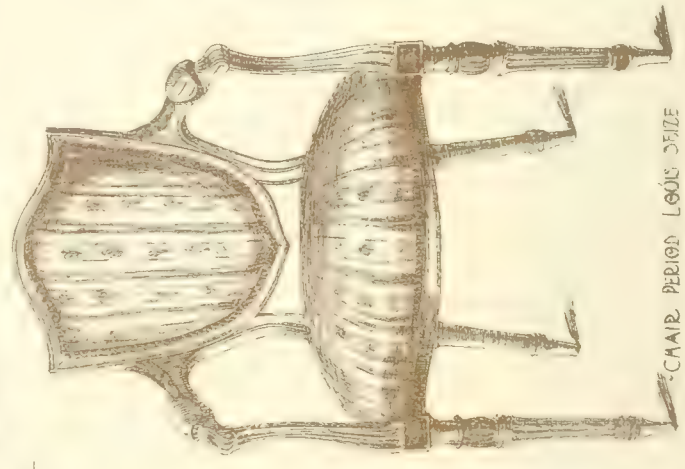


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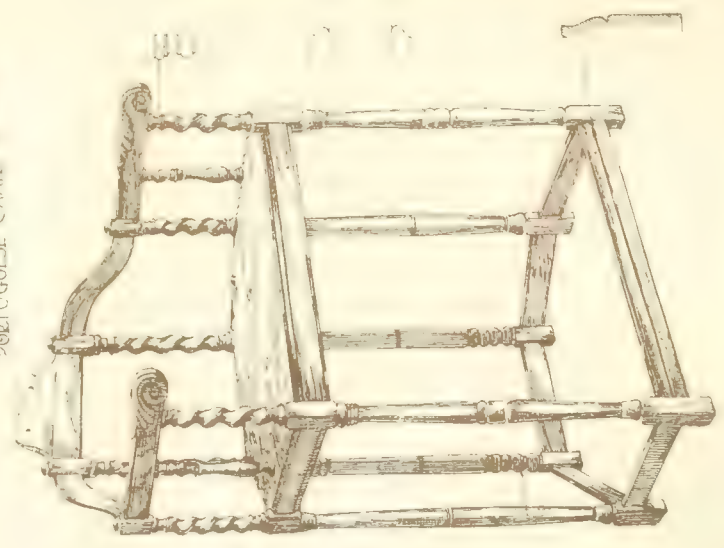
PAGE OF CHAIRS BY WILLIAM L WAELEMAN
NATIONAL SILVER MEDAL
DRAWINGS



FRENCH ARM CHAIR 16TH CENTY



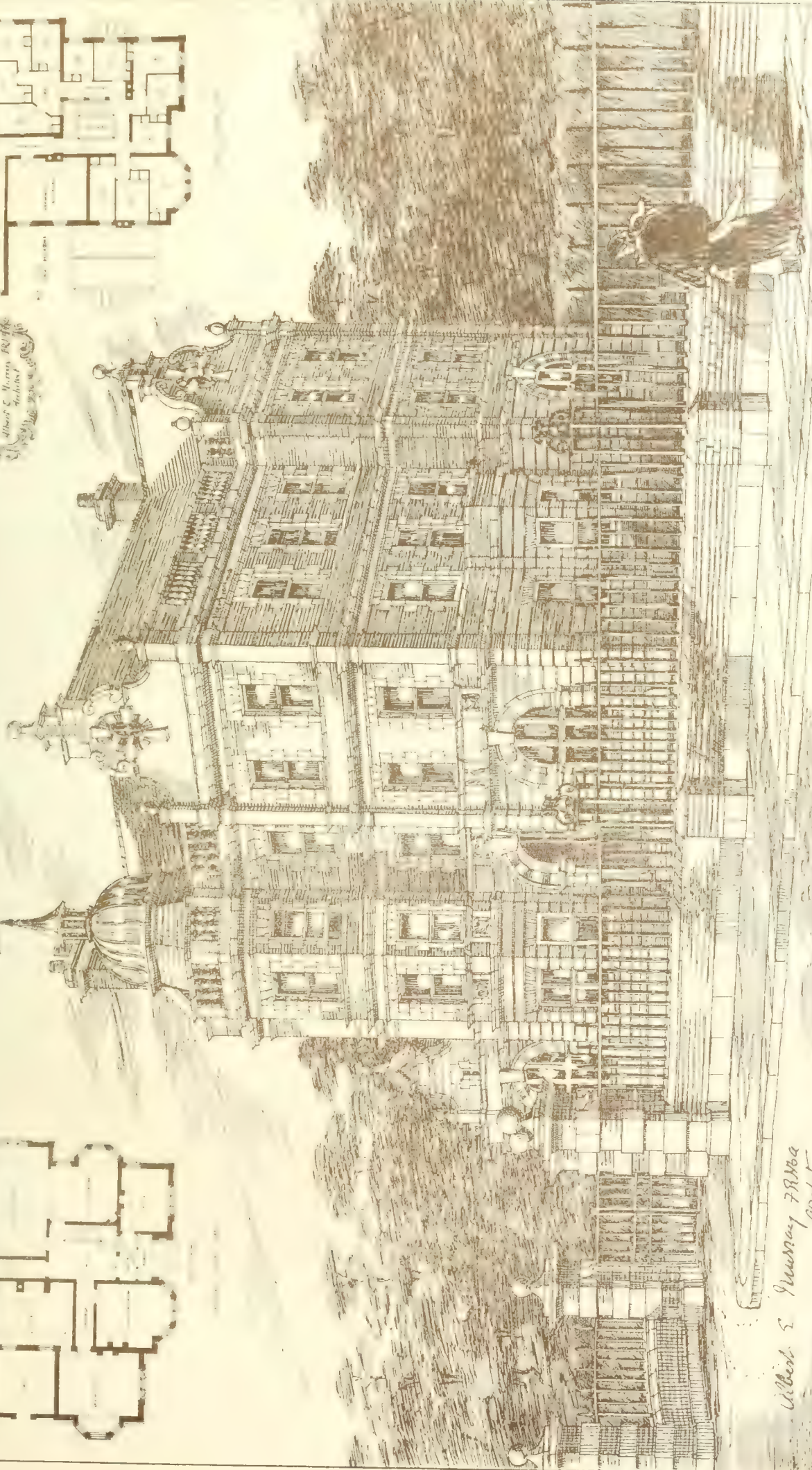
-CHAIR PERIOD LOUIS SEIZE



FRENCH ARM CHAIR 17TH CENTY ON



CITY OF DUBLIN
HOSPITAL
NEW WINGS HOME
Alfred C. Hussey Architect



Alfred C. Hussey Architect

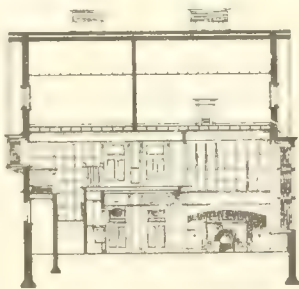
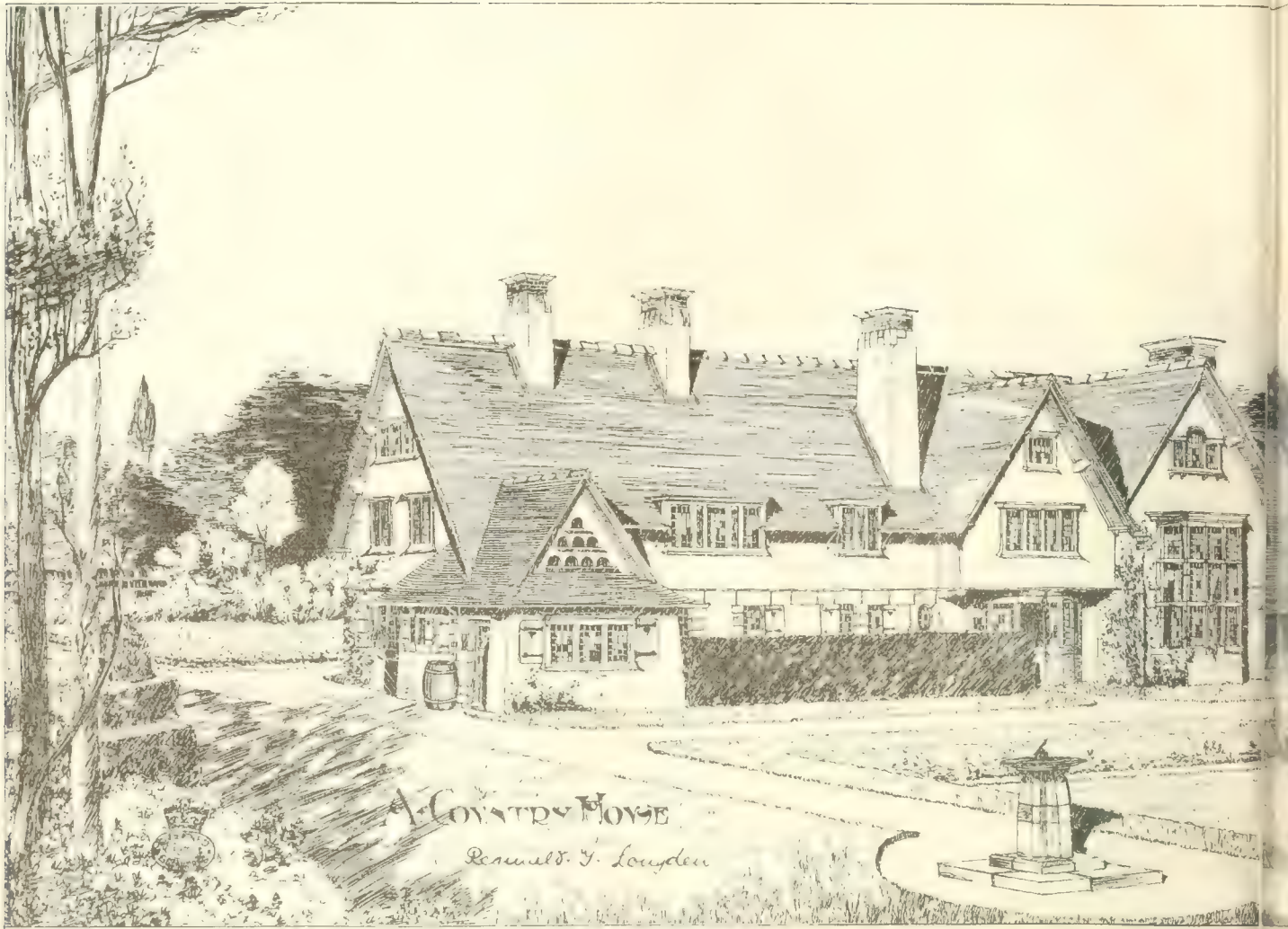
1900

KING JAMES V. TANAKA
 PRODUCTION DATE
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 JOHN ROYCE

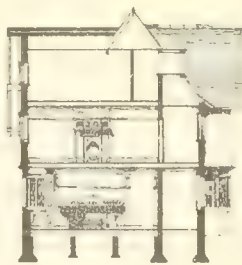




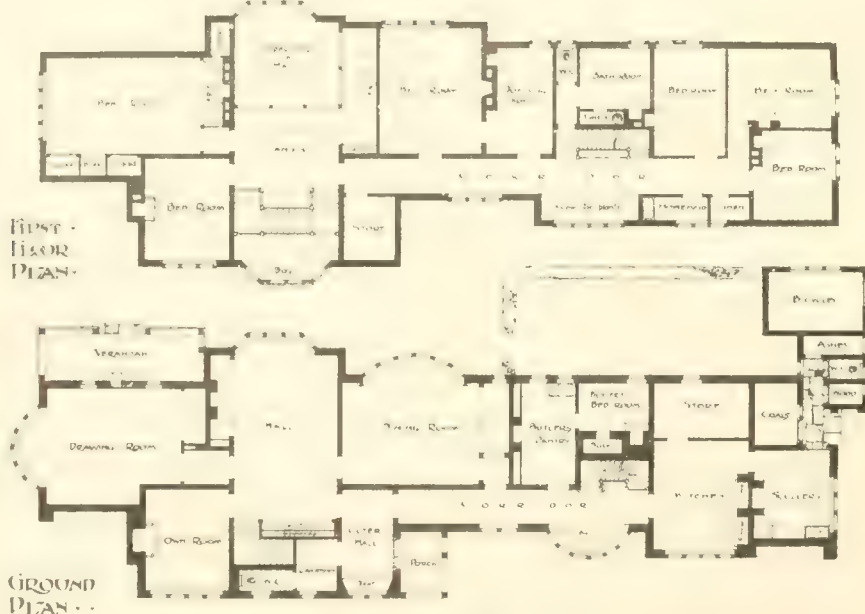




SECTION AA



SECTION BB

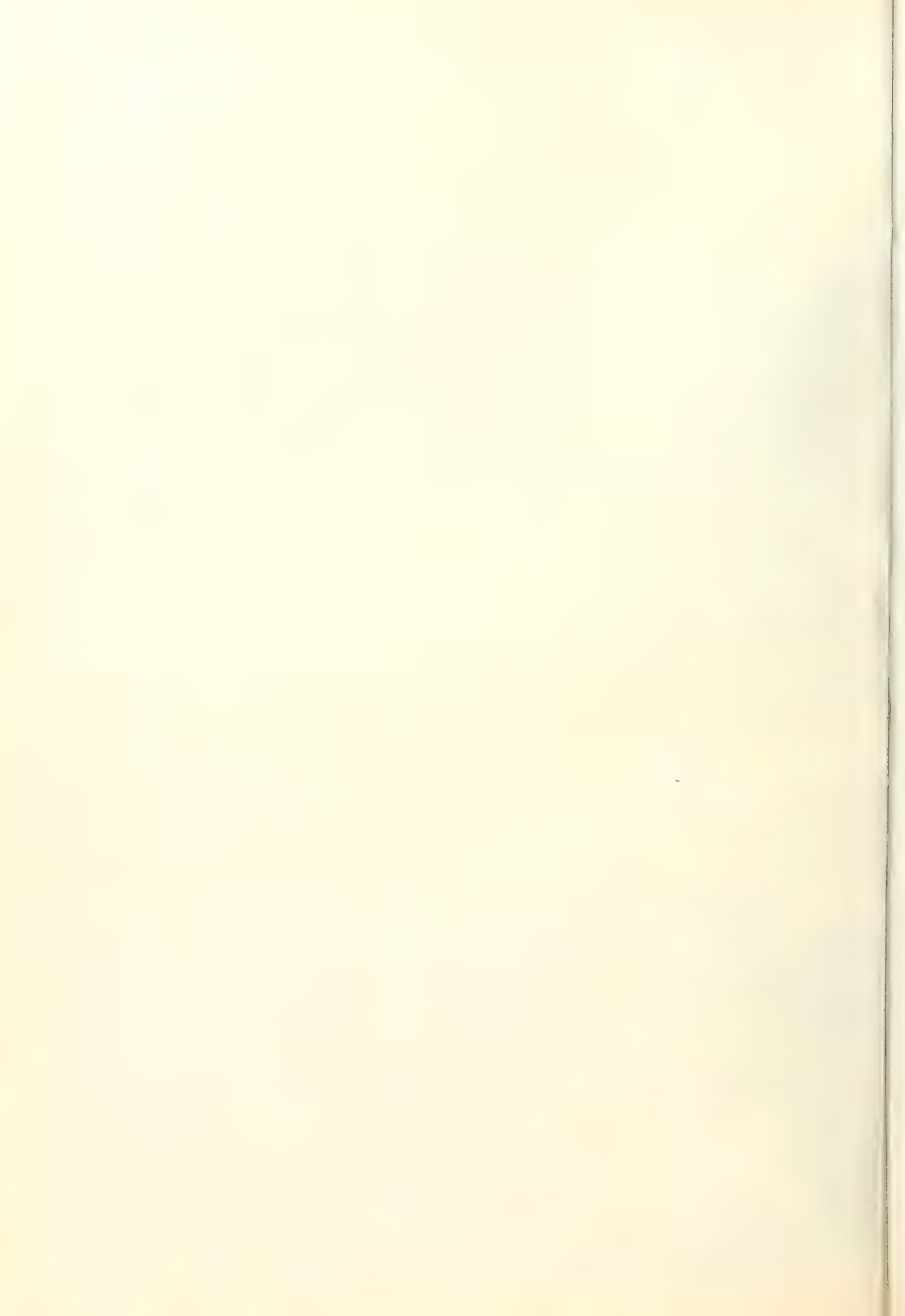


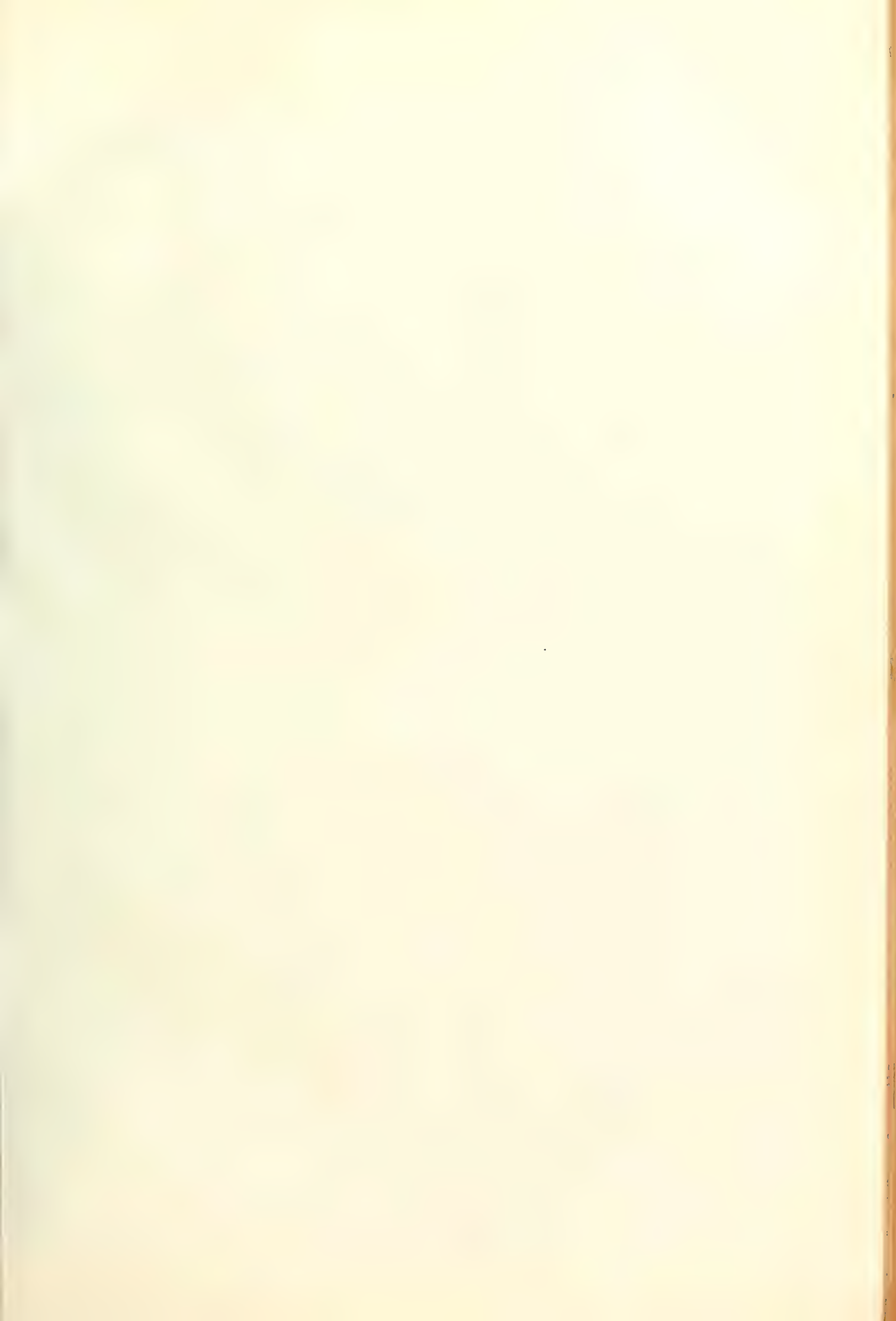
NATIONAL BRONZE MEDAL AWARDED



ELEVATION - TO - S.W.







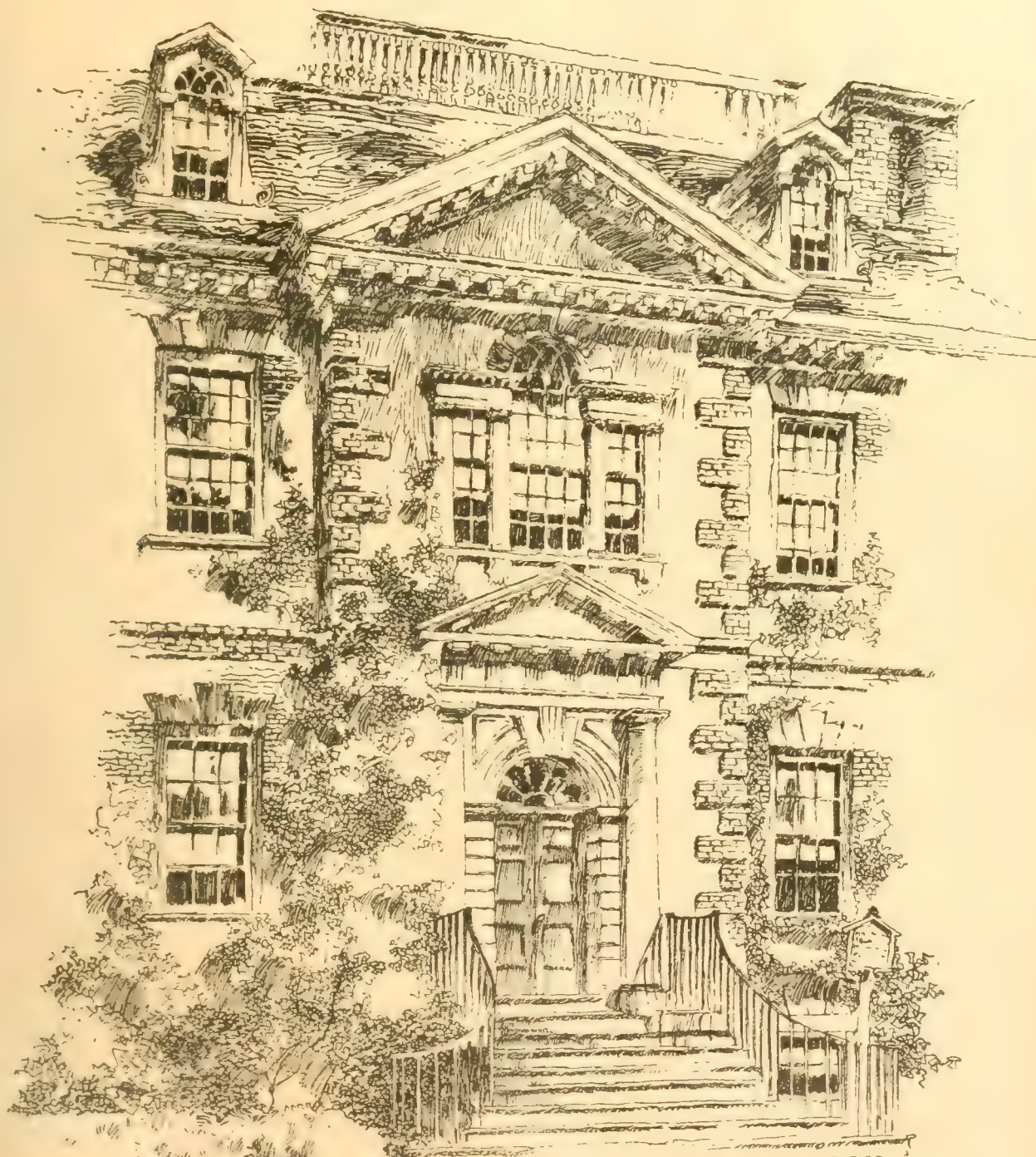


Jan 25, 1901.



PHOTO TINT

Bronze Medal Awarded to Mary S. Peck ♡



H. H. H. 93

FAIRHOLME MANSION
 FAIRMOUNT PARK PHILADELPHIA

NOTICE.

The Editorial, Advertisement, and Publishing Offices of the BUILDING NEWS and ENGINEERING JOURNAL, are at—

**CLEMENT'S HOUSE,
CLEMENT'S INN PASSAGE, STRAND,
LONDON, W.C.**

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Telephone No. 1633 Holborn.

Clement's Inn Passage is the turning west of the Law Courts, opposite St. Clement Danes Church, and our new offices can be reached in a few seconds from the Strand. They will be found on the right-hand side of the way, next door to the Vestry Hall.

TO CORRESPONDENTS.

[We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.]

It is particularly requested that all drawings and all communications respecting illustrations or literary matter should be addressed to the EDITOR of the BUILDING NEWS, Clement's House, Clement's Inn Passage, Strand, W.C., and not to members of the staff by name. Delay is not unfrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

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RECEIVED.—B. G. and Son.—D. F. M.—W. J. and Co.—F. W.—D. E. (Bristol)—R. M.

T. E. KNIGHTLEY.—Hardly worth while disturbing the ignorance of the Master of the Cordwainers' Company. Is it? You must allow something for "Chinese antiquity," you know!

Correspondence.

COLLATING THE "BUILDING NEWS."

To the Editor of the BUILDING NEWS.

SIR,—At this time there must be many subscribers to your paper who are vaguely wondering what they shall do with their BUILDING NEWS for the past year—possibly for several past years. To let the papers accumulate is wasteful and unenterprising. To bind each year's issue in one or two volumes is costly, and shelves are soon filled with unwieldy volumes that are not ideally convenient for reference. An alternative device, with all its imperfections and limitations, may interest your readers.

The discourses, descriptions, and other articles in your columns contain material of the utmost value, and my scheme, alas! does comparatively little for their preservation. But pictures speak for themselves, if they can easily be seen. When a year is finished I look through the entire issue, and put together all illustrations that seem likely to be of interest to myself. These I sort into classes, and place in boxes with others of like nature. The boxes are of cardboard, quite cheap, fairly dustproof, large enough to hold the double page extended, and vary from 2in. to 3in. in depth. They are boldly labelled to indicate the contents, and this is my present classification:—Churches, Houses, Municipal, Theatres, Educational (colleges, schools, libraries, galleries); Sanitary (hospitals, asylums, baths, homes, dwellings); Ancient Buildings (British); Ancient Buildings (Italian); Ancient Buildings (foreign, Italian excepted); Decoration and Furniture; Pictures, Miscellaneous.

Should I wish to study recent designs for schools, baths, civic buildings, churches or houses of any class, here is a valuable body of information in the handiest form. Each plate, being loose, can be removed and examined separately, and has yet a definite home for return. You sometimes publish large plates in many folds, that are a misery if bound up, but which give no trouble when taken from a box. A few years of your paper dealt with in this way supplies a host of exquisite illustrations—geometric and pictorial—of the most typical buildings of past ages, useful for many purposes, and not to architects alone. Also delightful reproductions of famous pictures, most interesting for the study of pictorial art and costume. The classification suggested is arbitrary; but almost any plate falls without question into one or other of these classes. Of course, subdivision may in time become necessary. And here is another advantage of boxes over books. The classification may be recast, or inferior examples may be weeded out, and space be thus left for better plates within the same bulk, that will gradually raise the general excellence of the collection. By the use of classified boxes, the illustrations from various papers may be mingled in one category, and the accidental loss of a single plate does not cause the annoyance that results when binding is intended.

Lastly, the destruction of the letterpress need not be absolute. It is easy to tear out pages containing matter of special interest to the collector, pin them together in sequence, and place them in the particular box to which they are by subject related. These fragments are not beautiful, but may increase the value of the collection for purposes of study.

Perhaps some other subscribers may try this scheme, and improve upon it.—I am, &c.,
Leicester, Jan., 1901. A. H. PAGET.

ANCIENT LIGHTS: JOINT REPORT
R.I.B.A. AND SURVEYORS' INSTITUTION.

SIR,—The report of the joint committee which appears in your last issue is interesting reading, and shows that the members of the committee have dealt with the matter in a very fair and practical way. May their efforts not be in vain! There is one point of special interest to architects in the provinces. I refer to clause 3, which intends to give power only to county and borough surveyors to certify the correctness of drawings showing buildings about to be taken down. There are very important towns and districts governed by "urban district councils." With some few exceptions, the surveyors to such urban district councils are professional surveyors equally capable and qualified to attest the drawings with the county and borough surveyors, and in very many cases it would be far more convenient to the parties primarily interested to employ them—to say nothing of the question of expense.—I am, &c.,
G. A. HUMPHREYS, Architect.

Mostyn Estate Office, Llandudno.

A CORRECTION AND AN OMISSION.

SIR,—I am glad to have the slip pointed out to me. I was certainly under the impression that the screen was restored from the designs of Sir G. Scott, and, indeed, in some of the references I have consulted, I am almost certain I alighted upon the information as I gave it. My notes, however, upon which I based my article, date from 1895, and I have not visited St. Alban's for over three years, as I am disgusted with the self-

assertive restorations at the Abbey and the utter vulgarisation of St. Peter's (?), at the end of that broad road south of the watch-tower.

I will look through my notes again, and will see that the mistake is corrected, as far as is in my power, in the copies I have in stock.

I hope I may count upon the support of architects and antiquarians, especially in the towns in or near which the abbeys in the book are situated.

—I am, &c., JOHN A. RANDOLPH.
128, Alexandra-road, Wimbledon, S.W.

BAPTIST CHURCH HOUSE.

SIR,—In your issue of last week Mr. Belcher's name is incorrectly given as architect of the Baptist Church House in Southampton-row. I am the architect of the building, and my plans for it are practically completed. At my suggestion, Mr. Belcher's opinion was asked on some points connected with the elevation upon which the committee felt undecided, with the result that my design has now been approved and adopted. I shall be much obliged if you will insert this correction.—I am, &c.,
ARTHUR KEEN.

4, Raymond-buildings, Gray's Inn, Jan. 24.

Intercommunication.

QUESTIONS.

[11676.]—Selenitic Cement, Concrete, &c.—I have heard that "Selenitic" cement is as strong as Portland cement as a matrix for concrete or mortar. If this is correct, seeing that Selenitic costs about half as much as Portland cement, why is it not more generally used?—MATRIX.

[11677.]—Stone for Window-Sills.—I have specified Portland stone for the sills of some windows. Is there any other stone quite as hard or harder that would do as well at less cost? The name of quarry and cost would be esteemed.—D. D.

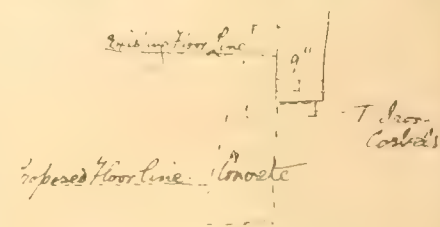
[11678.]—Water Supply.—Is it not better to have a separate supply for drinking water than to use the ordinary cistern supply, which is liable to pollution? Will any correspondent give me information as to the best way to obtain a pure water supply?—A. X.

[11679.]—Church Heating.—Will any reader kindly advise me as to the best system of heating a church of usual shape, with two side aisles, stone floor, capable of seating 500 people? What would be the probable cost? We have been recommended to try a hot-air apparatus, with channel 5ft. deep, across the west end of church. What do you think of it?—D. D.

[11680.]—Glazed Bricks.—Can anyone tell me the material that is used for glazing bricks, and to get red, white, and blue?—BRICKDUST.

REPLIES.

[11667.]—Party-wall.—I think the sketch below will overcome the difficulty. Excavate the required depth,



and put in a few piers of concrete; then, when set, fill in the whole length. Excavate and fill in first, and let set.—H. J. GENTRY.

[11670.]—Books.—"Notes on Building Construction," of Longmans and Co., 10s. 6d. for all except one, which is 21s.; or J. P. Allen's "Building Manual." One of the latest on modern house construction is by Sutcliffe, of Blackie and Co., well got up, five vols.—REGENT'S PARK.

[11679.]—Books.—Carefully study all the four volumes of the S. and A. Department's "Building Construction," also "Builders' Work," by Seddon. Try to get some practical experience on works and in an office.—H. L.

[11671.]—Stone or Brick Front.—It is impossible to give any idea of this without knowing the nature of the work and the locality. The only proper way is to take out both designs and price out carefully.—H. L.

[11672.]—Right of Light.—The old light is abandoned by being bricked up, and the upper light will not be an ancient light.—H. L.

[11673.]—Church Roof Timbers.—After staining the wood green, leave it simply as is.—HARRY HEM.

[11674.]—Crushing Resistance of Terracotta.—Terracotta piers, if properly constructed, will carry more than any brick pier.—H. LOVEGROVE.

[11675.]—Materials.—An architect should be very careful in varying the description of materials after the contract is signed, and if I were a client and my architect allowed "sea sand" to be used instead of "clear sharp sand," I should want to know the reason why.—H. LOVEGROVE.

LEGAL INTELLIGENCE.

WHAT IS A "PUBLIC BUILDING"?—*MOSES V. MARSHAND.*—This appeal, heard on Wednesday and Thursday of last week by Mr. Justice Bruce and Mr. Justice Phillimore from the decision of a metropolitan magistrate making an order against the appellant ordering him to comply with a notice served on him by the respondent, Ellis Marshland, M.S.A., the district surveyor for Camberwell, requiring him to do certain things under the provisions of that Act whilst carrying out certain alterations for the managers of the Metropolitan Asylums District at a building, No. 16, Elm-grove, Peckham. The facts were either proved or admitted. The managers of the Metropolitan Asylums District prepared a scheme for purchasing various dwelling-houses in different parts of London adjacent to schools for the education of children of weak intellect or physically defective. The houses were intended to be permanent homes for the children. No. 16, Elm-grove, had been an ordinary detached dwelling-house of two floors, with one room and a basement below, and had been purchased by the managers under the scheme; and they had instructed the appellant under the supervision of the board's architect to alter the house to make it suitable for the accommodation of 12 to 14 children and a matron, cook, and housemaid. The total cubical capacity of the dwelling-house was under 50,000 cu. ft. Before the appellant commenced work he served a notice on the respondent giving him notice that he was about to make alterations in the above dwelling-house and convert it into a public building. Thereupon the respondent served notices on the appellant, making certain requirements with regard to the staircase, the height of the rooms, &c. The only question before the magistrate was whether the building in the above circumstances was a "public building" within the London Building Act, 1894, sections 5 (27), 68, and 70. The magistrate held that the building was such a public building, and made the order asked for by the respondent. Mr. Macmorran, for the appellant, contended that the building in question was not within the definition in section 5 (27) of the London Building Act, 1894. The section did not apply to a mere dwelling-house, though placed under the auspices of a public body. He cited "*Joselyne v. Meeson*." Mr. R. C. Glen, for the respondent, contended that the building was a "hospital" within the meaning of the section, because the children for which it was intended were children suffering from physical infirmity. The Court allowed the appeal. Mr. Justice Bruce said that he was of opinion that the building in question was not a public building within section 5 (27) of the London Building Act, 1894. He did not agree with Mr. Glen's contention that the building was a hospital. Nor was the building within the section on the ground that it was a building used for "any other public purpose." The substance of the decision in "*Joselyne v. Meeson*" was that the phrase "public purpose" indicated, not a place in which the public had an interest, but one where they could gain admission. The building did not come within the term "home" because it had not a cubical capacity of 250,000 cu. ft. or sleeping accommodation for 100 persons. The magistrate, therefore, came to a wrong conclusion, and the appeal must be allowed. Mr. Justice Phillimore said that in his opinion the building was not a hospital in the modern sense of a place for treating physical ailments. He was of opinion that the building in question did not fall within the terms of the section, and that the magistrate's decision was wrong.

HIGHWAY ON NEW STREET?—*THE URBAN DISTRICT COUNCIL OF LEIGH-ON-SEA V. KING.*—Judgment was given in this appeal on Friday in the Queen's Bench Court, by Mr. Justice Bruce and Mr. Justice Phillimore, from the decision of justices of Essex dismissing an information preferred by the surveyor of the Leigh Urban District Council, the appellants, against Mr. R. S. King, the respondent, setting forth that the respondent on November 25, 1899, did, in pursuance of section 7 of the Private Street Works Act, 1892, serve on the appellants a written notice that the respondent objected to the proposals of the appellants in regard to levelling, paving, and making good Rectory-grove, on the ground that the said street was, in whole or in part, a highway repairable by the inhabitants at large, and the information further set forth that in consequence of this notice the appellants were precluded from making up Rectory-grove until the said objection had been heard and determined by a Court of Summary Jurisdiction in accordance with section 6 of the said Act. The only question at issue before the justices was whether Rectory-grove was, in whole or in part, a highway repairable by the inhabitants at large within section 8 of the Act of 1892. The evidence adduced showed that about 1842 the road on the north side of the rectory at Leigh, now known as Rectory-grove, was substituted for an older highway which ran in front or to the south of the rectory, and was known as Chesslane. Such substitution was made pursuant to a resolution of the vestry in 1842. There was no evidence of any repairs having been done to Rectory-

grove by the then rector or any of his successors, or the respondent. There was evidence of repairs on one occasion to Rectory-grove many years back by the surveyor of Leigh, and the Leigh Parish Council, the immediate predecessors of the appellants, had repaired the footpath in Rectory-grove. The justices found that Rectory-grove was a highway repairable by the inhabitants at large, and for that reason dismissed the information. Mr. Macmorran, Q.C., for the appellants, contended that no highway made after March 20, 1836 (the date of the coming into operation of the Highway Act, 1835), could be or become a highway repairable by the inhabitants at large until the steps mentioned in section 23 or section 84 of that Act had been taken, that Rectory-grove had been shown to have been made since March 20, 1836, and that as there was no evidence of the steps necessary under sections 23 or 84 of the Highway Act, 1835, having been taken, it could not now be a highway repairable by the inhabitants at large. He cited "*Reg. v. Dankensfield Township*," "*Eyre v. New Forest Highway Board*," "*Reg. v. Inhabitants of East Hagbourne*," "*Cubitt v. Maxse*," and "*Rishton v. Haslingden Corporation*" (1898). Mr. Mattinson, Q.C., for the respondent, said that all highways were, *prima facie*, repairable by the inhabitants at large, and that the road in question was undoubtedly a highway. The burden of proving, therefore, that the street was a street intended to be made under section 23 of the Highway Act, 1835, was upon the appellants. But even if the street was a street made under section 23, there was no evidence before the justices that the formalities thereby prescribed were not complied with. Having regard to the lapse of time and the fact that the street had been used by the public since 1842, it ought to be presumed that these formalities had been complied with. See "*Phillips v. Halliday*" and "*Williams v. Eyton*." Section 23 of the Highway Act, 1835, only applied to the case of a road made by a person or body of persons and dedicated to the public, and did not apply to the case of a person merely allowing the public to pass over his land ("*Reg. v. Thomas*" and "*Healey v. Corporation of Batley*"). The reason was that in the first case the gift of the road involved the certainty of an expense to the public, and it was expedient, therefore, that such a gift should only be accepted upon certain conditions, whereas in the second case the public would not be involved in any expense. Mr. Macmorran, in reply, said that the presumption that a highway was repairable by the inhabitants at large was displaced by showing that the road had come into existence since 1836. Therefore the burden of proof was upon the respondent. Mr. Justice Phillimore gave judgment first, in the course of which he said that he did not think that in every case where an additional highway was laid out the conditions of section 23 of the Highway Act (5 and 6, Will. 4, c. 50) must be fulfilled, although that was generally the case. He thought the section only applied when the road was "made by and at the expense of any individual or private person, body politic or corporate," and it was clear that if the parish itself through its surveyor made a road, it would not come under this section, as the later provisions of the section itself showed. It was, however, more probable that this highway was intended to be a substituted one, to which sections 84 to 92 would apply. If section 23 applied, a certificate by two justices which ought to be enrolled at quarter sessions was a necessary condition before the highway could become repairable by the inhabitants. But he did not think that the actual enrolment was a necessary condition. In his opinion there was evidence to support the decision of the justices. He was of opinion that judgment should be given for the respondent. Mr. Justice Bruce agreed that there was evidence to support the finding of the justices. Appeal dismissed.

LEEDS: AWARD IN THE QUEBEC-STREET ARBITRATION.—Mr. H. G. Harris (Messrs. Bramwell and Harris, civil engineers, London), who sat as umpire at the Leeds Town-hall in October last to assess the value of certain property situate at the corner of Wellington-street and Quebec-street, which had been compulsorily acquired by the corporation from the trustees of the late Mr. Frederick Jackson and of the late Mr. G. W. Bennett, has issued his award. Mr. J. M. Fawcett, of Leeds, was arbitrator for the corporation, and Mr. Charles Gott, of Bradford, acted in a similar capacity on behalf of the claimants. Mr. John Hepper (Messrs. Hepper and Sons, East-parade, Leeds), on behalf of the trustees, submitted a valuation amounting to £40,997, which was adopted by Mr. Thomas Winn and Mr. J. J. Mosley, Leeds. For the corporation, the evidence of Mr. W. D. Hollis (Messrs. Hollis and Webb), of Leeds, who valued the property at £18,355, was supported by Mr. Charles Appleton (Messrs. Oliver and Appleton), of Leeds. Mr. Harris has awarded £27,131.

PORTOBELLO PROPERTY ARBITRATION CASES.—The Government arbitrator, Mr. Hall Blyth, C.E., heard evidence on Friday and Saturday in the Council Chamber, Edinburgh, in regard to two

disputed cases of compensation under the Portobello improvement scheme. One of the properties in question belonged to Mr. Thomas Denholm, contractor, and is situated in Pipe-street. His claim amounted to £650, and the Corporation had offered £360. The other case related to property in the High-street, part of which was scheduled in connection with the improvement scheme. The claimants (the representatives of the late Mr. John Paterson) demanded that the Corporation should take, in addition to the property scheduled, certain other properties belonging to them in the immediate vicinity. The claim amounted to £3,000, and the Corporation had offered £1,200. Evidence was taken first as to the Pipe-street property. Mr. J. M. Thomson, architect for the proprietor, estimated that fair compensation would be £800. He was aware that the property was included in the slum scheme, but that did not affect his valuation. Mr. Smith, builder, Portobello, having also been heard for the proprietor, Mr. T. F. Marwick, architect, was examined for the Corporation. He considered the proposed settlement a most ample one, and if he had been advising Mr. Denholm he would have recommended him to accept it. Mr. Smart, house agent, Portobello, was also heard, and the case was closed. In the second case, Mr. W. M. Ormiston, architect and valuator, for the claimants, thought £2,690 was a fair valuation of the frontage and background. Mr. James Watherston, builder, corroborated. At the hearing on Monday, a consultation was held between the parties, as the result of which the Edinburgh Corporation agreed to acquire the whole of the properties for the sum of £2,250 plus £75 in name of expenses.

A GREENFORD ARBITRATION CASE.—At the Surveyors' Institution, Westminster, on Monday, Mr. G. A. Wilkinson sat as arbitrator to decide the value of land which the New River Company have acquired for the extension of their works. The lands in question are the property of Bingley's trustees, and are situated at Greenford, near Ealing, on the banks of the Brent. The claimants contended that the land, being within ten miles of London, should be considered as building land. The quantity acquired for the construction of works was about 2½ acres. Mr. E. Millard, surveyor, estimated the value of the land at £200 an acre, a total of £432 10s., or, with the usual 10 per cent. for compulsory sale, at £475 10s. To this he added £50 for an aqueduct, which is being constructed, and £2,034 10s. for the severance involved by this and the consequential damage to the estate, at the rate of £40 per acre. Other items made up the total valuation to £2,710. Mr. Daniel Watney, surveyor, estimated the value of the land at £300 per acre, and his total valuation was £2,048. Mr. Charles Jones, surveyor of the Ealing District Council, agreed with Mr. Millard's valuation. In his view the water company's aqueduct would entail an extra cost of £300 in the drainage works which would be required in developing the estate for building. For the company Mr. Boyle contended that there was no building value attached to the lands. They had agreed to give access across the lands, and, therefore, there could be no claim for severance. The land was low-lying, and before the cleansing of the river Brent by the Middlesex County Council had been subject to floods. He called Mr. E. Tewson, surveyor, Mr. E. Fuller, and Mr. Joshua Baker, whose valuation was £384. The arbitrator reserved his decision.

IRISH APPEAL AS TO ENGINEER'S FEES.—*READE V. KILKENNY CORPORATION.*—(Supreme Court of Judicature for Ireland, Court of Appeal, before the Lord Chancellor of Ireland, Lord Justice Fitzgibbon, Lord Justice Walker, and Lord Justice Holmes.)—This was an action brought by the plaintiff to recover a sum of £1,319 from the defendants while acting as engineer for them in the construction of waterworks in the city of Kilkenny. The action was tried before Mr. Justice Boyd and a special jury in June last in Dublin, and resulted in a verdict for £800 for the plaintiff, with costs of the action, the defendants being awarded the costs of several portions of the claim of the plaintiff on which they succeeded. When the matter came before the Taxing Master, the defendants claimed under this ruling a very large proportion of the general costs of the action. Application was then made by the plaintiff to Mr. Justice Boyd to vary his certificate and give effect to his real intention that the defendants should only get nominal costs. Mr. Justice Boyd having varied his certificate in November last, the defendants appealed. The plaintiff contended that the appeal was wrongly brought, and should have been made in the first instance to the Queen's Bench Division; and also that the amending order of Mr. Justice Boyd was a proper one, and was made with full jurisdiction. After considerable argument the Court unanimously allowed the appeal, with costs; but all the members of the Court intimated that the proportion of costs to which the defendants were entitled would be, in their opinion, very small.

BURLEY-IN-WHAIRFEDEALE WATERWORKS.—The arbitration in respect of the acquisition of Mrs. Crofton's two reservoirs and water-rights on Burley Moor, near Ilkley, was concluded last

week. The case is peculiar in its complications, and the methods of valuation adopted by the two parties illustrate two totally different principles. The claimants' engineers assumed that their client was in the position of a vendor of water, with power to sell in bulk to competing authorities, and assessed the claim, which included manorial rights, at over £11,000. On the other hand, the council's engineers contended that there was no power to sell or even divert the water; but merely to impound it up to, and no further than, the present capacity of the reservoirs, which are encroachments on a common, with rights gained by prescription only, and to turn such water into the stream bed. They, therefore, assessed the compensation for the reservoirs and water-rights on the basis of the rental received and user at claimant's mill, amounting to about £26 or £28 yearly, arriving at a total sum of £800 or £900 only. This they maintained was the true principle, as laid down by the Lands Clauses Acts—namely, the value to the claimant at the time of transfer. They also denied the existence of competition even if there were power to sell water. The umpire was Mr. T. T. Wainwright, of Liverpool, and the arbitrators Messrs. T. Fenwick and Geo. H. Crowther. The claimant's case was led by Mr. H. Johnson, C.E., and the council's case by their engineer, Mr. Malcolm Paterson, C.E.

CHIPS.

The town council of Romsey have voted their borough surveyor, Mr. Jenvey, an increase of £20 a year in salary.

A well-known Melbourne builder recently refused to have his name put on a foundation-stone because as he was named as the "contractor" of the building. Rather than have his name go down to posterity as a "contractor," he preferred to remain "unwept, unhonoured, and unsung." He had his own way, and is now definitely named on the stone as the "builder."

The Rochdale Corporation have decided to enlarge their free library by the addition of a two-story building facing Dane-street. The adopted plans, estimated to cost £4,500 in execution, have been prepared by Mr. Horsfall, of Todmorden, from whose designs the existing building was erected.

An adjudication in bankruptcy has been made in the case of Sidney Muggidge, of Clapham Park-road, S.W., architect and surveyor.

The opening ceremony of a new Welsh Baptist Church took place on Sunday, at Johnstown, Ruabon, being the first of the kind which has been built in the place under the auspices of the Maelor Valley Welsh Baptist Forward Movement. It has seating accommodation for about 250 persons, and has cost about £800.

The new workhouse, Llwynypia, is being ventilated by means of Shorland's patent exhaust roof ventilators, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

The date of the annual dinner of the Surveyors' Institute has been altered from Wednesday, Feb. 13, to Monday, March 4.

Rosherville Gardens have been sold by private treaty, and a local journal states that the intention of the purchaser is to keep them going as heretofore as a pleasure resort for the public.

Mr. Charles Broun, borough surveyor, Airdrie, has been appointed borough surveyor and sanitary inspector for the borough of Hawick, at a salary of £210 per annum.

Major-General Samuel Compton Turner, R.E., who died on December 31 last at Bombay, aged 58, served with the Mahood Wuzere expedition in 1881, and was director-general of military works in India from 1899.

In aid of the scheme to secure an additional 43 acres to Brockwell Park, Herne Hill, £63,350 out of the £66,700 has been secured from various public bodies and private donors by the local committee. The provisional contract for the purchase was signed some weeks ago, and an order has now been made by the Chancery Division of the High Court of Justice confirming it.

The Corporation of Southampton have raised the salary of Mr. W. Matthews, their waterworks engineer, from £450 to £500 per annum.

The Northamptonshire County Council have adopted the report of a special committee recommending them to build an inebriates' reformatory. The proposal is to erect buildings to accommodate 100 inmates committed by the magistrates, and a number of private patients. The estimated cost is £20,000.

A stained-glass window has just been placed in St. Andrew's Chapel at Canterbury Cathedral. The donor is Dean Farrar, and the window is in memory of Dean Stanley, who was formerly a Canon of Canterbury Cathedral.

Our Office Table.

THE Northampton County Council have had before them the question of the condition of the Queen Eleanor Crosses in the county which are to be found one at Geddington, near Kettering, and another just on the outskirts of Northampton. Only three of the beautiful crosses which once marked the series of halting-places during the Royal funeral march of about 159 miles, when the body of Queen Eleanor, wife of Edward I., was borne in solemn state from the scene of her death to Westminster Abbey, yet remain; these are the crosses of Northampton and Geddington in Northamptonshire, and Waltham in Hertfordshire. The march began on Dec. 4, 1290, the last pause before entry into the great Abbey being at the spot still named Charing Cross. These crosses were erected to the glory of God and in memory of Queen Eleanor, between the year 1291 and 1294. The cross at Geddington is under the care and protection of the Duke of Buccleuch, the Lord of the Manor; and has twice within the last twenty years been repaired under the direction of the late Sir A. Blomfield. The cross at Northampton has suffered from wanton injury more than from the weather. The County Council have no intention at present of restoring the Northampton cross; but if the mutilations continue, the Council intimate that they may have to place a fence around it.

MESSRS. ARCHIBALD SMITH AND STEVENSON write from the Janus Works, Queen's-road, Battersea, with reference to the recent fatal lift accident at London Bridge Station:—"Lieutenant-Colonel Yorke reports, in reference to this occurrence, that 'probably the majority of lifts in use in this country are fitted with safety gear of a description similar to that described,' which he condemns. As one of the largest British manufacturers of lifts, will you permit us to say that, though about twenty years ago such 'safety gears' were almost the only ones known, we at that date, for our part, finally abandoned their use on lifts of every class, and we know that at least a few other makers of repute adopted a similar course with their more important passenger lifts? The result has been that in recent years very few machines have been fitted with the type of gear condemned. There is, nevertheless, a lamentable amount of apathy displayed by the public with regard to this very important matter, and the efforts of makers to raise the standard of safety do not meet with the support they should, if the extra safety involves an extra expenditure. This is more especially the case in the manufacturing districts of the North."

FILTRATION tests of cement mortar, made to determine the action of salt water and solutions of the sulphates of magnesia and lime on concrete masonry, have recently been carried out in the United States. The mortar was made into hollow cubes or cylinders, prepared so as to be as porous as possible, and immersed in the liquids. The air inside each test-piece could be exhausted by an aspirator so as to hasten the penetration of the liquid from the outside to the inside of the blocks. Many cements and hydraulic limes were examined in this way; but the results, when tabulated, are stated to afford no reliable basis for forming a judgment of the action of the liquids on cements.

AN Italian philosopher, Signor Ferriani, has amused himself by constructing a scale of degrees for the measurement of professional envy. In this envy-measurer the highest point is 10. Architects are happily placed lowest on the scale. They register only 1; advocates and priests and military men are ranged at 2, and in the ascending scale he gives us professors of science and literature, 4; journalists, 5; authors, 8; physicians, 9; actors and actresses, 10. The small amount of envy among architects is held to be due to their precise, severe, and rigid studies. The same thing applies to advocates. Among the clergy envy is found mostly in the preachers. In the military career, envy is quiescent in time of peace, but can become acute in time of war. Envy makes men of science and literature lead solitary lives, diffident of each other. Among physicians envy is still more prevalent, and they do not spare their colleagues, often terming them charlatans. In the theatrical world envy, according to Signor Ferriani, reaches its acute form, vanity playing a great part in its production.

The Deeside United Free Church Presbytery have approved of plans for a new church at Torphins.

MEETINGS FOR THE ENSUING WEEK.

SATURDAY (TO-MORROW).—St. Paul's Ecclesiological Society: Annual meeting, St. Paul's Chapter-house, E.C. 2.30 p.m.
Civil and Mechanical Engineers' Society. Visit to Caird and Rayner's Works (water distilling machinery, condensers, feed heaters, &c.), 777, Commercial-road, London, E. 3 p.m.
MONDAY.—Society of Arts. "Elementary Art Education," Cantor Lecture No. 3, by J. Liberty Tadd. 8 p.m.
Surveyors' Institution. Adjourned discussion on "The Future of the London Water Supply." 8 p.m.
TUESDAY.—Society of Arts. "Examples of Romanesque Architecture, North Italy," by Hugh Stannus, F.R.I.B.A. 8 p.m.
WEDNESDAY.—Society of Arts. "Evolution of Form in English Silver Plate," by Percy T. Macquoid. 8 p.m.
FRIDAY.—Architectural Association. "Cretan Architecture," by D. T. Fyfe. 7.30 p.m.

THE ARCHITECTURAL ASSOCIATION.—FEBRUARY 1st—ORDINARY GENERAL MEETING, at No. 9, Conduit-street, at 7.30 p.m. Paper by Mr. D. T. Fyfe, on "Architecture in Crete and Turkey," illustrated by Lantern Views.

G. B. CARVILL, Hon. Sec.
R. S. BALFOUR, Hon. Sec.

Trade News.

WAGES MOVEMENTS.

GLASGOW.—A largely attended meeting of the master joiners in Glasgow and district has been held in the Building Trades Exchange. It was unanimously agreed to hold out firmly for 9d. per hour, and it was decided to make arrangements whereby firms who have locked-out men who demanded 10d. per hour may be supplied with men at 9d. per hour. The employers have been informed that many operatives were working on the masters' terms, while several employers announced that they were getting as many men as they wanted. There are over 1,000 men on strike, and this number is likely to be considerably increased in the course of a few days.

NORTH OF ENGLAND BRICKLAYERS.—A meeting of the Northern Counties' Centre of Federation of Master Builders was held in Leeds on Friday, when it was stated that the officials of the Bricklayers' Association had recommended their men to accept the masters' offer of arbitration and a two years' guarantee of the wages at the existing rate. Unfortunately, the men declined on Wednesday to accept these terms, and the strike therefore for the present continues, although it is believed a *modus vivendi* will be arranged. The dispute, which at one time threatened to envelop Yorkshire and Lancashire, has existed for some months in Northumberland and Durham.

ST. HELEN'S LANCES.—The lockout of St. Helen's joiners, which has lasted for the past six months, has come to an end. The joiners gave notice that on and after July 1 last year they would not fix any foreign-made joinery, this term being applied to all joiners' work made in shops where trades-union conditions do not prevail. There were only two or three shops affected, but the St. Helen's Master Builders' Association decided to lock-out the whole of the members of the two trade unions of which the local joiners are members. Employers and employed have had a lengthy conference, and it has been decided that the lockout should come to an end, the question in dispute to be left over for future consideration. The men had also given notice of a demand for an increase of a halfpenny per hour in their wages and certain other alterations in their working rules, but they have withdrawn the notice, and the locked-out men are resuming work on the same conditions that prevailed in June last.

In consequence of the death of the Queen, the meeting of the Society of Architects, convened for last (Thursday) evening, and at which a paper on "Designing Small Houses and Cottages," by Messrs. Barry Parker and Raymond Unwin, was to have been read by Mr. Unwin, was postponed.

Col. W. Langton Coke, C.E., held an inquiry on behalf of the Local Government Board, on Thursday in last week, at Newark with reference to the application of the corporation for permission to borrow £20,000 for waterworks extension purposes.

Alterations are being made to the town-hall, Rugeley, and special attention has been given to the ventilation, which will be carried out on the "Boyle" system.

We regret to record the death of the wife of Mr. Edward W. Mountford, F.R.I.B.A., of Buckingham-street, Strand. Mrs. Mountford died on Saturday last at Barcheston, Westover-road, Wandsworth.

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Dowanhill, Public Schools.	Dovehill, Public Schools.
Edinburgh, Preston St. Schools.	Ellesmere, St. Oswald's College.
Erdington, St. Thomas's Abbey.	Glasgow, St. Mungo Girl's School.
Ferndale, Schools.	Keyham, R.N. College.
Glasgow, School.	Kingston-on-Thames, Technical Schools
Kensington, Royal College of Music.	Lyme Regis, St. Michael's School.
Leicester, Technical Art School.	Llwynypia, New Schools.
Leicester Sq., Arch. Tenison's School.	Manningham, St. Cuthbert's School.
Munster Sq., St. Mary Magdalene School	Northfleet, Board School.
Millvale, Pa., Millvale Schools.	Northampton, British Schools.
Nottingham, Ilkestone Rd. Board School	Owen's St., Dame Owen's School.
Newport, Board School.	Ogle St., Schools.
Oxford, Manchester New College.	Philadelphia, Pa., Boys' High School.
Pentre Porth, Schools.	Reading, University Extension College
Reading, Oxford Rd. Board School.	Tottenham, St. Katherine's College.
Southwark, Holland St. Schools.	Westminster, St. Stephen's Schools.
Treorky, Cwmpark Schools.	Worthing, The Convent of Notre Dame de Zion.
Wimbledon, Ursuline Convent.	

Many of the above are New Buildings, others are large Additions or Reconstructions, and have been carried out to the entire satisfaction of the Architects.

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Rolled-Steel Joists, English.....	9 0 0		10 0 0
Wrought-Iron Girder Plates.....	9 0 0		9 15 0
Bar Iron, good Stuffs.....	8 7 6		9 7 6
Do., Lowmoor, Flat, Round, or Square.....	20 0 0		20 0 0
Do., Welsh.....	5 15 0		5 17 6
Boiler Plates, Iron—			
South Stuffs.....	7 17 6		8 5 0
Best Suedhill.....	13 0 3		13 10 0
Angles 10s., Tees 20s. per ton extra.			
Builders' Hoop Iron, for bonding, &c., £6 15s.			
Builders' Hoop Iron, galvanised, £15 10s. 9d. per ton.			
Galvanised Corrugated Sheet Iron—			
No. 18 to 20. No. 22 to 24.			
8ft. to 8ft. long, inclusive	Per ton.		Per ton.
gauge.....	£12 5 0		£12 10 0
Best ditto.....	12 15 0		13 0 0
Cast-Iron Columns.....	£9 0 0	to	£9 10 0
Cast-Iron Stanchions.....	9 0 0		9 10 0
Rolled-Iron Fencing Wire.....	11 15 0		12 15 0
Rolled-Steel Fencing Wire.....	11 15 0		12 15 0
Galvanised.....	13 0 0		14 0 0
Cast-Iron Sash Weights.....	6 5 9		6 10 0
Cut Clasp Nails, Sin. to 6in.....	12 0 0		13 0 0
Cut Floor Brads.....	11 15 0		12 15 0
Wire Nails (Pointe de Paris)—			
0 to 7 8 9 10 11 12 13 14 15 B.W.G.			
11/- 11/6 11/9 12/3 12/9 13/6 14/3 15/- 16/- per cwt.			
Cast-Iron Socket Pipes—			
8in. diameter.....	£8 17 6	to	£7 5 0
4in. to 6in.....	6 15 0		7 0 0
7in. to 24in. (all sizes).....	6 15 0		7 0 0
[Coated with composition, 2s. 6d. per ton extra; turned and bored joints, 5s. per ton extra.]			
Pig Iron—			
Cold Blast, Lilleshall.....	Per ton.		105s. to 110s.
Hot Blast, ditto.....	57s. 6d. to 62s. 6d.		
Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b.—			
Gas-Tubes.....	60 p.c.		
Water-Tubes.....	55 "		
Steam-Tubes.....	50 "		
Galvanised Gas-Tubes.....	47 1/2 "		
Galvanised Water-Tubes.....	45 "		
Galvanised Steam-Tubes.....	40 "		
10cwt. casks, bowt. casks.			
Per ton.			
Zinc, English (London mill).....	£25 0 0	to	£25 10 0
Do., Vieille Montagne.....	26 0 0		26 15 0
Sheet Lead, 8lb. per sq. ft. super.	21 0 0		22 0 0
Pig Lead, in 1cwt. pigs.....	20 0 0		21 0 0
Lead Shot, in 28lb. bags.....	23 0 0		24 0 0
Copper Sheets, sheathing and rods.....	89 0 0		90 0 0
Copper, British Cake and Ingots.....	75 10 0		76 0 0
Tin, Straits.....	120 5 0		121 15 0
Do., English Ingots.....	123 10 0		124 0 0
Spelter, Silesian.....	18 7 6		19 2 6

TIMBER.

Teak, Burmah.....	per load £10 10 0	to	£16 5 0
" Bangkok.....	10 0 0		15 5 0
Quebec Pine, yellow.....	4 7 6		5 5 0
" Oak.....	3 5 0		4 15 0
" Birch.....	3 0 0		6 0 0
" Elm.....	5 0 0		6 0 0
" Ash.....	3 7 6		3 15 0
Dantaic and Memel Oak.....	3 5 0		4 15 0
" Fir.....	3 0 0		4 0 0
Wainscot, Riga p. log.....	1 17 6		3 5 0
Lath, Dantaic, p.f.....	4 0 0		6 15 0
St. Petersburg.....	4 0 0		6 10 0
Greenheart.....	7 15 0		8 0 0
Box.....	7 0 0		15 0 0
Sequoia, U.S.A.....	per cube foot	0 1 9	0 2 0
Mahogany, Cuba, per super foot			
lin. thick.....	0 0 8		0 0 8
" Honduras.....	0 0 8		0 0 7 1/2
" Mexican.....	0 0 4		0 0 4 1/2
" African.....	0 0 2 1/2		0 0 5 1/2
Cedar, Cuba.....	0 0 3		0 0 3 1/2
" Honduras.....	0 0 2 1/2		0 0 3 1/2
Satinwood.....	0 0 10		0 1 9
Walnut, Italian.....	0 0 8		0 0 7 1/2
" American (logs).....	0 2 3		0 4 6
Deals, per St. Petersburg Standard, 120-12ft. by 1 1/2 in.			
by 1 1/2 in.:			
Quebec, Pine, 1st.....	£25 10 0	to	£30 0 0
" 2nd.....	18 10 0		21 0 0
" 3rd.....	12 10 0		14 0 0
Canada Spruce, 1st.....	11 10 0		14 15 0
" 2nd and 3rd.....	9 10 0		10 5 0
New Brunswick.....	8 0 0		10 0 0
Riga.....	8 10 0		11 10 0
St. Petersburg.....	11 10 0		18 0 0
Swedish.....	11 10 0		21 0 0
Finland.....	12 0 0		13 10 0
White Sea.....	12 10 0		22 0 0
Battens, all sorts.....	5 0 0		12 0 0
Flooring Boards, per square of lin.:			
1st prepared.....	£0 12 9		£0 19 0
2nd ditto.....	0 11 6		0 14 9
Other qualities.....	0 7 0		0 13 6
Staves, per standard M.:			
U.S. ditto.....	£37 10 0		£45 0 0
Memel, cr. pipe.....	220 0 0		230 0 0
Memel, brack.....	190 0 0		200 0 0

OILS.

Linseed.....	per tun £30 0 0	to	£30 5 0
Rapeseed, English pale.....	30 10 0		30 15 0
Do., brown.....	29 0 0		29 5 0
Cottonseed, refined.....	21 10 0		22 0 0
Olive, Spanish.....	35 0 0		38 0 0
Seal, pale.....	26 0 0		28 10 0
Cocoonut, Cochin.....	27 15 0		28 0 0
Do., Ceylon.....	25 15 0		26 0 0
Palm, Lagos.....	28 0 0		28 5 0
Oleine.....	17 5 0		19 5 0

Lubricating U.S.....	per gal.	0 7 0	"	0 8 0
Petroleum, refined.....	"	0 0 6 1/2	"	0 0 6 1/2
Tar, Stockholm.....	per barrel	1 6 0	"	1 6 0
Do., Archangel.....	"	0 19 6	"	1 0 0
Turpentine, American.....	per tun	37 0 0	"	37 5 0

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LIST OF COMPETITIONS OPEN.

Tanfield—Three and Four-Roomed Cottages.....	£10, £5.....	R. Heslop, U.D.C. Surveyor, Burnopfield.....	Jan. 25
Bristol—Alterations to Petty Sessions Court and Offices.....	£100, £50.....	The Clerk, County Council Offices, Bristol.....	Feb. 13
Ballarat, Victoria—Soldiers' Statue, Bronze or Marble (cost £1,500, £2,000, £2,500).....		J. W. Nedwell and W. D. Hill, Hon. Secs., Ballarat, Victoria.....	" 14
Nottingham—Sewerage Scheme for the Parishes of Colwick-Gudling and Burton-Joyce.....		C. J. Spencer, Clerk, Public Offices, Basford, Nottingham.....	Mar. 25
Dudley—Six Villas and Six Cottages.....	£10.....	G. W. Waring, Mining Engineer, 42, Wellington-street, Dudley.....	"

LIST OF TENDERS OPEN.

BUILDINGS.

Briton Ferry—Public Library and Council Offices.....	Urban District Council.....	H. A. Clarke, Architect, Briton Ferry.....	Jan. 26
St. David's, Pembrokeshire—School Buildings.....	County School.....	D. E. Thomas, Architect, Haverfordwest.....	" 26
Falkirk—Extension at Lodging House, East Bridge-street.....	Grammar School Governors.....	D. Ronald, Burgh Surveyor, Burgh Chambers, Falkirk.....	" 26
Barnet—Chemical Laboratory.....	E. Banks.....	Boyes and Son's Office, Wood-street, Barnet.....	" 26
Castleford—Business Premises, Carlton-street.....	Miss Nolan.....	Gariside and Pennington, Architects, Pontefract.....	" 26
Bridlington—Alteration at Harbour House.....	Urban District Council.....	Samuel Dyer, Architect, Bridlington.....	" 26
Kingscote—Reroofing Tor Hill House.....	H. Loomes.....	Samuel Segar, F.R.I.B.A., Architect, Newton Abbot.....	" 26
Penarth—Bandstand, &c.....	School Board.....	Edgar J. Evans, A.M.I.C.E., Surveyor, Penarth.....	" 26
Colchester—Showroom, &c., High-street.....	Gas Co.....	J. W. Start, F.S.I., Architect, High-street, Colchester.....	" 26
Hutton Cranwick—Foresters' Hall.....	Portsmouth School Board.....	J. Shepherdson, Architect, Manor-street, Bridlington.....	" 26
Erith—Board Offices and Cookery Centre.....	Yorkshire Banking Co.....	Ford, Son, and Burrows, Architects, 21, Aldermanbury, E.C.....	" 26
Kendal—Foundations for Gasholder Tank.....	Town Council.....	T. N. Ritson, A.M.I.C.E., Gasworks, Kendal.....	" 26
Halifax—Thirty Houses, &c.....	Urban District Council.....	Medley Hall, M.S.A., 29, Northgate, Halifax.....	" 26
Southern—Additions to Highland-road Board School.....	Metropolitan Asylums Board.....	A. H. Bone, Architect, Cambridge Junction, Port-mouth.....	" 26
Middlesbrough—Pulling Down Premises, Exchange-place.....	Exors. of late R. J. Bentley.....	Bedford and Kitson, Architects, Greek-street Chambers, Leeds.....	" 26
Sheffield—Destructor Buildings.....	School Board.....	Charles F. Wike, C.E., City Surveyor, Town Hall, Sheffield.....	" 26
Croydon—Sewage Pumping Engine-House, Mitcham-road.....	Clifton Indust. Schools Committee.....	E. Mawdesley, Town Clerk, Town Hall, Croydon.....	" 26
Dartford—Fire Station.....	Urban District Council.....	W. Harston, Surveyor, High-street, Dartford.....	" 26
Tring, Mon.—Primitive Methodist Chapel, Commercial-road.....	School Board.....	W. S. Williams, Architect, Elmwood, Tring.....	" 26
Swanley—School.....	Exors. of late R. J. Bentley.....	Newman and Newman, Archts., 31, Tooley-st., London Bridge, S.E.....	" 26
Pudsey—Block of Five Houses.....	School Board.....	C. S. Nelson, Architect, Sun Buildings, Park-row, Leeds.....	" 26
Dalton Brook—Grapes Hotel.....	Clifton Indust. Schools Committee.....	H. L. Tacon, Architect, 11, Westgate, Rotherham.....	" 26
Hatfield, East Yorks—Primitive Methodist Chapel.....	Urban District Council.....	Rev. F. Holmes, Clowes Cottage, Hornsea.....	" 26
Southwark—Additions to Board School.....	School Board.....	Clayton and Black, Architects, 152, North-street, Brighton.....	" 26
Dewsbury—Hide and Skin Market, Mill-road.....	Clifton Indust. Schools Committee.....	F. W. Ridgway, F.R.I.B.A., Borough Chambers, Dewsbury.....	" 26
Bristol—New Wing.....	Urban District Council.....	T. B. Bernard, F.R.I.B.A., St. Stephen's, Baldwin-street, Bristol.....	" 26
Llandudno—Alterations to Montpellier Hotel.....	School Board.....	W. L. Farrington, A.M.I.C.E., Trinity-square, Llandudno.....	" 26
Sandgate—Stores, &c., North-lane Yard.....	Urban District Council.....	A. R. Bowles, A.M.I.C.E., Surveyor, Sandgate.....	" 26
New Hunstanton—Six Houses.....	School Board.....	E. Walker, Dersingham Villa, New Hunstanton.....	" 26
Bampton, Oxon—Eight-Roomed Stone Bungalow.....	Guardians.....	The Manager, Carterton Building Estate, Faringdon.....	" 26
Kingsbridge—Board Schools.....	Corporation.....	T. W. Latham, Architect, Kingsbridge.....	" 26
Oxenhope—House.....		T. W. Bottomley, 16, Princess-street, Haworth.....	" 26
Barnsley—Mission Church, Measborough Dyke.....		Senior and Clegg, Architects, Regent-street, Barnsley.....	" 26
Manorhamilton—Repairs to Workhouse Building.....		Peter Keany, Clerk, Manorhamilton.....	" 26
Halifax—War-house, &c., Preston-place.....		John Drake and Son, Architects, Queensbury.....	Feb.
Port Talbot—Foundations for Steelworks.....		J. Jardine, Engineer, Post Office Chambers, Port Talbot.....	"
Huntingdon—Mortuary, &c.....		The Borough Surveyor, High-street, Huntingdon.....	"
Halifax—Workshop, &c.....		W. Richardson and Son, Hall-street, Halifax.....	"

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

VOL. LXXX.—No. 2104.

FRIDAY, FEBRUARY 1, 1901.

THE DESIGN OF "FLAT" DWELLINGS.

AN interesting paper on "Flats," by Mr. E. T. Hall, F.R.I.B.A., read at the Architectural Association, will be found in our last issue. The subject is one deserving of attention, besides having the charm of freshness; for, however long many have been accustomed to build and live in flats, the topic has not been one that has appealed to the architect's sympathies. In short, whatever the value of this building arrangement may be, it has not "taken on" in England as it has done on the Continent and in Scotland, and, architecturally, it is discredited. Why, we cannot say, because there is as much skill required to design a block of flats as there is for a row of dwelling-houses. Certainly our efforts in this direction have not been very gratifying. The Victoria-street block, and those we see erected in several parts of London, at Brompton and Kensington, Gray's Inn-road, Battersea, Brixton, Camberwell, and Clerkenwell have little that is prepossessing about them: they are generally dull and expressionless blocks, designed more on speculative lines than with any desire to carry out a new problem architecturally. Notwithstanding such paucity in design, the residential flat is one of the developments of modern life in our crowded cities. The classes removed from the harder conditions of life, often prefer a flat, which they can lock up for the season to a town house with all its care and expense. Mr. Hall points out the problems to be solved in the construction of town flats. He shows that in a West-End thoroughfare, where shops are necessary on the ground floor, it is better to provide bachelor suites of rooms than family suites. One sitting-room, one bedroom, and bathroom will be sufficient, and these will realise high rents in side streets. He says in Bayswater, Kensington, Chelsea, Westminster, and other parts flats over shops will, as a rule, be taken only by the lower middle class; in other residential parts blocks of flats of good style will be sought for by well-to-do people who do not care for a town house and the expense of a garden, and who spend a good deal of their time abroad or in the country. Our experience is that the better kind of flats are more lucrative in suburbs of London removed from the proximity of crowded thoroughfares and tram-lines, and that if shops are provided on the lower floor the better kinds of tenants will not be attracted. But, as Mr. Hall says, in Paris and Vienna these drawbacks do not hold, where the most sumptuous suites of rooms are found over shops and in the hearts of the cities. We can explain this difference in the nationalities by the fact that the suburbs of Paris and Vienna are more restricted, if they can be said to exist at all. Both cities are more confined and circumscribed, for Paris has its lines of fortified wall. We see in the more fashionable quarters splendid houses, flats, and shops, and in the Faubourg St. Germain great hotels of the nobility. The Bourse is close to a fashionable quarter, and there is no "City," as in London, confined to commerce and business, and the outskirts of Paris are inhabited by the poorest. The habits of Frenchmen are also more sociable. These conditions prevail in most great Continental cities. Many of the best apartment houses of Paris are designed in a rich and exuberant style, with shops on the ground floor in the principal streets. Turning to plan, we

find the entrance and staircase always made a prominent feature. Many of the latter are handsomely decorated and lighted either from internal courts or through glazed partitions from the service staircase; and in Paris, as Mr. Hall observes, there are generally a principal and a service staircase combined—not perhaps the best plan in case of a fire; indeed we should prefer two distinct staircases, which might, as suggested, be carried up to the roof, and be connected by a fire-resisting passage. Two staircases are certainly better than only one, which seems to be the rule alike in Paris and in Vienna. A service staircase is a great security if a fire should occur, and ought to be constructed next an external wall. On the Continent the principal staircases are often semi-circular or elliptical in plan, and it is better when they are in connection with a spacious hall, well lighted, with a fireplace. The average London block of flats has a contracted entrance, seldom more important than the doorway of a private house, giving access to a stairs, often inconveniently close, or a narrow passage intervenes. In Vienna the author refers to the large blocks with only one staircase, with a comparatively narrow passage leading to it from the street. The tradesmen's boys often are a source of nuisance, and may be one reason why service staircases are not provided. The transport of goods from the ground-floor level to the front door of the flat can be effected by means of small hand-lifts passing outside the kitchen, or through a service hatch. Mr. Hall refers to the smallness of the kitchens and offices of the Paris and Viennese flats, which measure about 13ft. by 10ft., and many much less; but these are often tiled and decorated, and in many the scullery is dispensed with, and a small pantry with sink substituted. Larders are rare, and the servants' bedrooms are either placed on the top floor or adjoin the kitchen—a very insanitary arrangement; but in London the servants are accommodated in the flat. The dimensions of these bedrooms are often very small, and a minimum of, say, 10ft. square should be observed.

Many serious defects of a sanitary kind are found in the Continental flats: closets and bathrooms without windows; bedrooms out of kitchens; larders without ventilation and near closets, these being often placed next the staircases; soil-pipes carried down inside walls, which may transmit infectious germs; internal staircases, which are dangerous and insanitary; small, unventilated well-holes, &c. These are pointed out by Mr. Hall. The well-hole should have an inlet channel at the bottom, as provided by the London Building Act. Much may be said on the planning of the hall and landings of each flat in a large block; the staircase is better broken up by "half-spaces" than made continuous, and it is desirable, if possible, that only one suite of rooms should open out of the staircase on each floor. There are often two or more; but, of course, this depends on the area and size of each flat; for one suite of five or six rooms it would be costly to have a separate staircase. With two flats, one of them can be made larger than the other. As a general rule, the number of floors or separate flats should govern the size and number of the staircases. The higher the block, or the more numerous the flats, the fewer should be made to open on them. Mr. Hoffmann's flat at Queen's Gate has one flat to a staircase in the centre, and in the wings there are two flats to the staircase. Other plans were named by the author. At St. Ermin's Hotel and Mansions at Westminster, designed by him, having 650 rooms, six staircases are provided, connected at the top. The site, of course, dictates the plan; a U-shaped arrangement is one of the best. One thing to avoid in planning is the narrow passage

hall. A better form would be a square, octagon, or circle, as in M. Nerrot's block in the Rue la Botte, and in M. Poupinel's flat, Rue Descamps, having rooms of geometrical shapes well lighted and arranged. In London the author refers to Palace Chambers, Buckingham Gate, in which Messrs. Martin and Purchase have converted an angle site into a well-lighted interior with much skill. The question of light is a difficult one. Mr. Hall also describes a quadrant arrangement designed by himself at the corner of Sloane-gardens. We must look to our French and Austrian colleagues for skilful planning and design in this branch of architecture, to the large and handsome doorways one sees in Parisian apartment houses in many of the better parts of their capital, in which the Renaissance has been very tastefully adopted externally, and in the internal decoration, many of the rooms and their adjuncts, baths, boudoirs, recesses for beds, *commodes*, being most skilfully and artistically planned in a small area, and with a refinement we look for in vain in our own buildings of this class. With regard to style, probably some phase of the Renaissance is more often chosen than Classic or Gothic; but there is no reason why the latter style could not be more frequently adopted. The treatment of residential flats has too generally been a repetition of the fenestration of one floor—the same unit repeated *ad nauseum* as we find in some flats in King-street, St. James's, whereas much variety could be obtained by changing the proportion and sizes of the windows. No doubt it is desirable constructionally to place void over void; but this does not necessarily impose the same size and width of openings on each floor. Variety in the fronts may be secured by the use of bays and recesses, open loggias or galleries, so as to avoid the rigid horizontal lines and skyline. The staircases also can be pronounced externally in many cases, if not made to project somewhat after the manner of the celebrated escalier of the Château de Blois. Attention to these features and the entrances and roof-lines would remove the reproach often made that our blocks of flats resemble huge barracks or hospitals devoid of any external expression. One example mentioned in this connection is Whitehall Court, on the Embankment, by Messrs. Archer and Green—a building devoted to flats of residences and offices, and a conspicuous structure when viewed across the Thames. Thoroughly French in its Renaissance treatment, it has the redeeming qualities of good grouping and a well-broken roof and sky-line, due largely to the care taken by the architectural experts on the committee to whom the design was submitted to have a building that should harmonise with the adjoining clubhouse. While subsidiary to the demands, good construction, fire-resistance, fireproof floors, exits, sanitation, and ventilation—matters which the paper of Mr. Hall dealt with more or less satisfactorily—architectural plan and features are of the first moment to buildings of this character. When the site is not restricted in depth and width, the central quadrangle, as we see in many modern hotels in Paris and London, will give opportunities for effective grouping, as in the Boulevard St. Michel or the Palais Leon-Wernberg; but large sites are not usually found in the Metropolis. When a suite of rooms comprises three reception and, say, five bedrooms, bathroom, and two closets, or small kitchen with a pantry fitted near it, and these are arranged chiefly along the façades owing to shallow depth, some variety and expression in the external architecture might reasonably be expected.

The length of the North-Western Railway of India open for traffic in March last was 3,544·7 miles.

THE LAW OF ANCIENT LIGHTS.

THE law of ancient lights has long since been shown to be in an unsatisfactory state, and the report of the joint committee of the Royal Institute of British Architects and Surveyors' Institution is one that will be read with satisfaction by the profession, especially by those engaged in "light" cases. The co-operation of the Surveyors' Institution was absolutely necessary in bringing about a proper understanding, and the result has been the drawing up of certain recommendations and amendments, which we printed last week. Hitherto, by the existing law, claims have been made by adjacent owners for an amount of light that is far beyond reasonable expectation, the consequence of which has been that new buildings and reconstructions in our crowded towns have been hindered. Any litigious neighbour can check the progress of a building on a very trivial pretence, by filing a bill for a mandatory injunction, without considering whether the building would cause material injury or not. An injunction to restrain building owners, or to prevent interference with light, is a very vexatious proceeding, and is really so in most cases where an injunction to restrain is applied for. It is a course very much abused, and is simply intended, in many cases, to extort money from the defendant. The first recommendation of the committee is practically intended to prevent these vexatious proceedings, and is as follows: "The right to ancient lights shall, in all cases where such rights have not been already acquired, be limited to a right to receive light sufficient for all ordinary purposes, but shall not include a right to light of extraordinary amount for special purposes." It is now common for a neighbour to make a vexatious objection to a building-owner who wishes to raise or extend his premises without having any acquired right, or to claim for an amount of light necessary only for a particular vocation or business, and by this clause such a claim will be prevented. The second recommendation will materially simplify the procedure in cases where the servient owner is afraid of his neighbour acquiring dominant rights. He may serve upon such neighbour a formal notice as prescribed by the Act, and may advertise the same in the daily papers, and register the same at the land registry of the district or at the offices of the county or municipal council of the locality, and such notice is to have the same effect as though an interruption had been submitted to for one year, such notice to run with the land. By this means an owner who in course of time may acquire dominant rights will be prevented from taking any advantage of his neighbour or steal a march upon him by threatening to obstruct his light, and in this way many vexatious proceedings will be stopped.

The next clause (3) provides for the certification and registration of drawings of any building to be taken down by the owner, which shall be accepted as legal evidence—a very necessary preliminary to the demolition of buildings having ancient lights. We have again and again recommended a careful record to be made of any building proposed to be taken down, or any alteration made in an old one, before it is pulled down, to be certified by the district surveyor or other authority; such drawings to be carefully measured, and be available for inspection by all parties. By these drawings no doubt could arise about the height of any part of the building or position of the windows. Then, by the next clause, it is provided that no building erected after Jan. 1, 1905, shall acquire any fresh right of light or air where it abuts on any street, highway or road, court or alley used by the public, or as an access to tenements held in the same or in various ownerships.

Anyone who considers his ancient lights have been, or will be, interfered with by any proposed erection will have the right to inspect the drawings of the building owner, or be informed of his intentions, or to ascertain them from the building itself to find out if there is any interference. This recommendation will remove any doubt or suspicion, and tend to allay any ill-feeling, and must often lead to a mutual understanding between the parties. If the neighbouring owner, lessee, or occupier considers that his lights will be interfered with, he is to give notice in writing of his objection to building owner within seven days, together with name and address of the surveyor acting for him. Within seven days the building owner is to acknowledge the said notice by registered letter, and inform neighbouring owner or occupant the name and address of his surveyor, and such two surveyors are, within ten days of the date of appointment of the last of them, to select and appoint an umpire, the umpire being a member of the R.I.B.A., or of the Surveyors' Institution. Clause 8 further provides that the two appointed surveyors meet and discuss the points raised by the owner, lessee, or occupier, and if no settlement is come to, refer the matter to the umpire. These are the main points in the recommendations published, which, if incorporated in the proposed Bill, cannot fail to remove many of the hindrances to a settlement of differences, and the risks and expenses incurred in stopping the operations of building. It is extraordinary the existing law has been suffered so long.

The R.I.B.A. have published many useful papers and theories on the subject of ancient lights, including those of Professor Kerr in 1866, Mr. Loebeck Webb, Q.C., in 1877, and later the valuable papers read at the Institute by Mr. J. Fletcher Moulton, Q.C., Mr. J. Douglass Mathews, and Prof. Beresford Pite in March of last year, summaries and reports of which will be found in these pages in March of last year. In May, 1882, a special report was published by a committee appointed by the Institute to consider the question. Little was done till the Society of Architects appear to have agitated in the matter upon the question of reform by presenting a petition to the Lord Chancellor, since which time the subject has assumed a more definite form. The President of the Society, Mr. W. Emden, has taken a very keen interest in the subject for many years, and the joint committee of the Institute and Surveyors' Institution is the result of these agitations, and has been the first effort made to bring about an amendment of the law. On questions of this kind learned theories and papers on the defects of the law, valuable as they are, amount to very little, until a few practical men take the subject up, and approach the authorities. We think the agitation on the question is at length bearing fruit, and that practical steps will be taken before long to make the law more just. The owner's right in respect of ancient light should be first of all determined and expressed in concise terms. If the measure of light enjoyed for the twenty years uninterrupted period of the Prescription Act could be ascertained, the question would be clear enough; but, unfortunately, it has been mixed up with the consideration of the reasonable enjoyment of light. In other words, the Courts practically have been deciding the matter upon the reasonableness of the amount of light received. Mr. J. Fletcher Moulton, Q.C., M.P., one of the joint committee appointed, in his paper on the subject we published last March, says distinctly: "Although the Courts nominally accept the dictum that it is the light as previously enjoyed, it is obvious that the two principles are irreconcilable. If reasonableness decides it, history is irrelevant; if history decides it, reasonableness is no matter." Thus, if the owner of the privileged windows received an unin-

terrupted view of 45° of sky from the zenith, it has been thought the reasonable requirements have been satisfied.

The law as it stands is intricate, and gives rise to much trouble and expense, owing to the way the law is applied to actual facts. The amendments of the law should secure justice to both the dominant and servient owners; it should aim at a speedy settlement of differences, so that risks and expenses incurred in stopping the progress of buildings, and in altering or adding to them when erected, may be prevented. It has been thought that the technical rule is wrong that damages cannot be given for a threatened injury to a building. Discretion should be given to the High Court to substitute for an injunction that may be granted for darkening old windows, a money payment, so that an encroachment upon equitable terms could be allowed for some portions, and an injunction granted to restrain any further encroachment. Legislation should also take into account the remedial effects of using materials that reflect light, such as white bricks in light-areas, and these means ought to be taken into account in adjudicating injury. Well-known reflecting surfaces and refracting prisms might be used with this object. The aim of any reform should be to facilitate as well as simplify procedure. Paragraph 2 of the suggested amendments to which we have referred is, to our minds, the principal clause to this end: it aims at preventing the acquisition of the right by serving a notice on the owner who may become dominant. We presume the effect of this rule will be to do away with the erection of obstructing hoardings and other like means of preventing the acquisition of the easement; if it does, it will remove a very objectionable and violent practice that must have the result of intensifying the ill-feelings of the building owner. A notice served on the owner or occupier of the tenement that is likely to become dominant will remind him in a friendly and business-like manner that his neighbour is not bound to submit to the dominant right and all that it implies. Thus the existing very provocative proceedings of obstructing his windows will give place to a simple reminder that the servient owner has his rights as well as the dominant owner. The proposed amendment will at least expedite matters. Injunctions often take a long time to issue, and thereby cause delay and cost. Then the preparation of plans and elevations of old premises about to be pulled down, attested as they will be by the district surveyor, will help to settle any doubt as to the position of ancient lights, as the neighbouring owner or occupier of any building will have the right to inspect such plans. At present the threatened adjoining owner is often left in ignorance of the building owner's intentions, till he finds his premises darkened. Objection is made, or proceedings are taken, after the building is advanced, when any alteration to the plans would entail considerable cost and trouble. Rather than yield, the building owner proceeds or defends the action, and so the evil of litigation is aggravated.

Some means are necessary to limit the acquisition of rights by prescription. This is partially met by paragraph 4 of the recommendation which declares that after Jan. 1, 1905, "No building shall acquire any fresh right of light or air where it abuts on any street, highway, road, court, or alley used by the public, or as an access to various tenements, &c." No doubt this clause will meet with some opposition from those whose right are nearly acquired; on the other hand, it will stop the growth of the right which now seriously interferes with the addition to or alteration of buildings in our streets. The question of settling the points in dispute between building and adjoining owners is dealt with in paragraphs 8 to 12 of the report. If the two appointed sur-

veyors cannot come to an agreement, the umpire has power to view the buildings of both plaintiff and defendant, to take evidence, and in twenty-one days make his award. He has to consider the right of the building owner to carry out his building, and of any alteration necessary to lessen the obstruction complained of; the amount of compensation, the improvements to the adjoining premises by light-reflecting surfaces, enlargement of lights, and the cost to be borne by each or either party. Should either party be dissatisfied with the umpire's decision, he may make an appeal to a committee of nine persons, three architects appointed by the R.I.B.A., three surveyors appointed by the Surveyors' Institution, and three barristers appointed by the Home Office, and their decision shall be final; but if either party refuse to accept the decision in cases in which a larger sum than £500 is awarded, either in money damages or works, he may have power within one month to bring the matter before the High Court, whose decision shall be final. A public Bill is to be drafted to carry out these provisions. It would have been satisfactory if the practical question of estimating damage had been considered. What is now the chief difficulty is in finding the easement owner's real interest. The technical or legal aspect is now regarded as the main question, to the detriment of the building owner, and the actual interference with the easement is not considered. We should like to have seen some definite rules laid down—such that no building should be erected above a line drawn at 45° from the horizon from window-sill in a vertical direction; while horizontally certain lateral angles should be observed based on experiment. Any erection that went beyond the limits of these angles would have to pay a compensation. But there is at present nothing definite, and therefore the legal or technical decisions, unsatisfactory as they are in many cases, control the question much to the satisfaction of the lawyers. Until the law as to ancient lights is codified, as it is in the Building Acts, the present unsatisfactory proceedings will continue. The amendments proposed will greatly help to simplify and expedite the legal procedure in ancient light cases; but they do not touch the vital question, How to assess the damage? by pointing to a definite rule of light. To take a very simple and common case, a troublesome and unscrupulous person prevents his neighbour from improving his property by threatening proceedings, or by injunction, unless he pays a heavy compensation. The neighbour tries to resist this kind of blackmailing, but finds the law does not help him, and he has either to submit or come to a mutual agreement with his neighbour—an almost impossible thing to expect. There are hundreds of such instances, where the existing law encourages blackmail, and interferes with improvement. New legislation is urgently needed, which, while protecting ancient lights, shall enable a reasonable *quid pro quo* to be given, taking into consideration the real facts of each case.

ARCHITECTURAL POTTERY.

FEW books have been brought out dealing with the use of pottery in architecture, though many trade and technical treatises and papers have been written on bricks, terracotta tiles, and faience. M. Leon Lefèvre is a well-known authority, and his comprehensive work on the subject, dealing mainly with French production, has been translated from the French by K. H. Bird, M.A., and W. Moore Binns, and is now before us. The preface has been written by M. J. C. Formigé, architect to the Government and to the City of Paris, who points out the

gradual exhaustion of French quarries and the consequent rise of the price of building stone. Brick, terracotta, cement are now largely taking the place of natural stone, while every architectural student is aware of the decorative application of brick and terracotta in the splendid examples of Italy, especially in the Milan district. In decorative pottery we have also the beautiful works of the Della Robbia family, which show that the artists of the Renaissance understood the value of clay as a material that could be used and adapted for the higher purposes of art. M. Lefèvre's book describes the processes of manufacture the mechanical appliances, and many useful constructive and artistic applications of clay in its various forms. In this treatise the student can trace every step in the working of clay, its natural properties, composition, contraction, effects of various substances, the mode of crushing, mixing, cleaning, and the machinery of crushing-cylinders and mills, pounding machines, damping, horse and steam pug-mills, the manufacture of bricks, tiles, pipes, and terracotta, and the many varieties of machines used in the different processes. Plain and enamelled terracotta colouring, and the manufacture of tiles and quarries are also treated in detail. As a textbook for manufacturers, architects, and artists in decoration science, this translation will be found of much service.

Part I. deals with Plain Pottery, and Part II. of Made-up or Decorated Pottery. In the earlier chapters, the physical properties of clays, the working of clays, preparation of the clay, and the processes of manufacture are very fully and technically treated. The geological description of clays under the four groups of sedimentary rocks—primary, secondary, tertiary, quaternary, is sufficient to give the student a grasp of the situation of clays, large deposits occurring in the tertiary and later rocks, such as those in the Paris basin, which are worked for bricks, tiles, pipes, &c. Some of these plastic clays extend to a great depth, as below Saint-Denis. At Auteuil and Montreuil the clay is used for porcelain. Speaking of contraction, it is stated that the shrinkage of clay is considerable when made into a paste, and may be as much as a quarter of the linear dimensions. In the case of brick clay, the total shrinkage in drying and firing is from 5 to 15 per cent. of the linear dimensions, and plastic and fusible clays are chiefly affected. Experience is required to discover the shrinkage of clays to fix the proper dimensions of moulds and dies; 10 per cent. is allowed as an average in expression machines, between the brick issuing from the die and the same brick baked. The remarks on fusibility and chemical composition of clays, and the analyses of well-known tables given are useful. The presence of potash and soda and lime, oxides of iron, &c., greatly affect their qualities. The alkalies act as fluxes at high temperatures, therefore ordinary brick paste should contain a very little of them; but in stoneware and porcelain pastes, they are added. Lime increases the fusibility of clays. In the hard French china, there is from 3 to 6 per cent. of lime, which is increased to 10 to 14 per cent. in soft porcelain. In faïences, intended for stoves, lime is absolutely necessary by preventing cracks and increasing resistance to fracture, and its proportion in faïence pastes is from 14 to 22 per cent. Another section deals with the working of clay; its extraction, transport, &c., and some good photo-illustrations are given of the working of plastic clay at Arcueil. We have detailed descriptions of the transport-wagon and trucks; the Mining Law, regulations as to the working of quarries. The preparation of clays includes the disintegration of the mass by cutting and crushing, washing, and the addition of foreign substances for the paste by adding water and antiplastics, pugging, &c. The processes of hand and machine-mixing are fully explained and illustrated by several kinds of mixing-mills, filter-presses, mechanical stone-removing appliances, washers, crushing-mills which will be of interest to manufacturers. The process of soaking has called out much ingenuity in the shape of moistening-machines; sand, carbonate of lime, marls, cinders, coke-dust, &c., and other antiplastics to shorten the clay are described, and rolling-machines and pug-mills of various types are considered in this connection. Most interest will attach to the chapter on brick-making, every step in which is described. Useful remarks are made on hand-moulding, especially as practised in Picardy and Flanders. We read: "Contraction is generally estimated

from 5 to 10 per cent.—i.e., in order to have a brick 0.22 × 0.105 × 0.05 after firing, a mould of about 0.23 × 0.115 × 0.052 must be used, contraction acting principally on the breadth of the brick on account of its position in firing." The processes of moulding by hand and machine are fully illustrated by the machines or presses used. Details and illustrations of the cylinder expression machine (Joly), and hand cylinder machine are given. All cylinder machines are on the one principle. Installations, comprising rolling, damping, pugging, moulding, and other processes are described and illustrated for brick factories, which will be found of value. The important processes of drying and firing are fully detailed and illustrated by diagrams into which we cannot enter here. The types, dimensions, and forms of kilns for solid fuel, such as the Hoffmann kiln, rectangular kiln, and other kilns on the principle of continuous firing, carried out by Hoffmann and Licht, are of interest. Continuous kilns, with gas fuel, are described also. The latter sections of the book deal with ornamental bricks for various purposes, hollow bricks, architectural examples of brickwork at Pisa, Ravenna, Rome, details of brickmaking from Toulouse, Tours, Bruges, Berlin, &c. The manufacture of tiles, terracottas, plain stoneware, enamelled bricks, paving and decorated quarries, and decorated pottery follow in the later chapters, and these are fully illustrated. The author is a Frenchman, and, therefore, his work is written from a French standpoint, and does not enter into the subject of English manufacture in this material. Nor does he seem to know what we have done here with terracotta. His sections on roofing-tiles give particulars of those used in France, and really our English types are largely developed from the Roman, and fitting tiles like those of Gilarioni. These tiles have an interrupted vertical joint, or fit together with flanges and grooves. The Marseilles tile and the Artois, or pantile, are other examples of lozenge shape or rectangular tiles fitted together with a catch and hook joint or clip. Tiles with continuous vertical joint by a broad and deep groove are common both here and on the Continent. The Boulet and Marseilles tiles are much used, and we have corresponding English types. Speaking of encrusted quarries, M. Lefèvre mentions the names of Doulton and Co., Messrs. Carter and Co., Maw and Co., Hollins and Co., &c., "who can produce pieces excellent in quality and ornamentation." The work is the most comprehensive textbook on the manufacture of bricks and tiles and decorative pottery we have, and is illustrated by plates and numerous engravings in the text.

THE NATIONAL GALLERY.

A SERIES of twenty-two sepia drawings by A. Turner for the Liber Studiorum, which form part of the late Mr. Henry Vaughan's bequest to the National Gallery, have been placed on a screen in the Turner Room (No. XXII.) in the Gallery at Trafalgar-square. Other studies for the Liber Studiorum already in possession of the Gallery, 51 drawings in all, which have been exhibited in the Turner water-colour rooms downstairs, have been removed from those rooms, and placed on screens in Room XXII. The remaining pictures and studies of the Vaughan bequest consist of "Christ on the Mount of Olives," formerly attributed to Raphael, and now ascribed to L. Spagna or to one of his school, the figure of the Saviour being an exact replica of that in the "Agony in the Garden," No. 1,032 in the National collection; a portrait of the artist's two daughters, "Margaret and Mary," by Gainsborough; a "Portrait of a Boy," by François Duchatel (1616-1694); a sketch, "A Classical Landscape," by Gainsborough; "A View in Sussex," by Patrick Nasmyth; twelve sketches and studies in oil by Constable; seven small pictures by Stothard; a portrait of himself by Opie; a landscape, "Brathey Bridge, Cumberland," by Old Crome; and a drawing by Sir Joshua Reynolds, the study which he made from himself for the expression in the face of "Horror" for his picture of Mrs. Siddons as the Tragic Muse. All these will be hung in the galleries at Trafalgar-square as soon as room can be found for them.

Besides these the bequest included a number of small pictures and sketches by Sir Edwin Landseer, Thomas Creswick, R.A., Frederick Lee, R.A., Antoine Calame, Alexander Fraser, W. Hilton, R.A., Charles R. Lester, R.A., William

* Architectural Pottery. By LEON LEFÈVRE, Ingénieur (E.I.R.). Translated by K. H. BIRD, M.A., and W. MOORE BINNS. London: Scott, Greenwood, and Co., Ludgate-hill.

Etty, R.A., William Mulready, R.A., Thomas Sidney Cooper, R.A., Edward W. Cooke, R.A., James Holland, Lord Leighton, P.R.A., and Sir J. Everett Millais, P.R.A., which will shortly be hung in the National Gallery of British Art at Millbank; also two life-size marble statues—"John Flaxman, R.A.," by Henry Weekes, R.A., and "Sir Joshua Reynolds, P.R.A.," by John Henry Foley, R.A. These are placed in the niches in the central octagon of the National Gallery of British art, one of which was already occupied by the statue of Sir David Wilkie, removed from Trafalgar-square. The fourth niche will ultimately be filled by a statue of Gainsborough, to be executed by Mr. Brock, R.A., from a sum of money bequeathed by Mr. Henry Vaughan for this purpose.

The late Mr. Henry S. Ashbee has bequeathed to the National Gallery two pictures by Robert Smirke, R.A., being illustrations from "Don Quixote"; a landscape, "River Scene with Ruins," by Richard Wilson, R.A.; a landscape, "The Canal of the Giudecca," by Edward W. Cooke, R.A., and a picture, "Uncle Toby and the Widow Wadman," by W. P. Frith, R.A. The last two are hung in the National Gallery of British Art, and the others will shortly be placed in the galleries at Trafalgar-square.

Mr. Boughton, R.A., has presented a small picture, a "Landscape with Water Mill," by Allart von Everdingen (1621-75), hung in the gallery at Trafalgar-square (Room X). Mr. H. W. B. Davis, R.A., has presented to the National Gallery of British Art his large picture "After Sunset," exhibited in the Royal Academy last year; and Mr. Ralph Peacock has given his picture, "The Sisters," which was also in last year's exhibition of the Royal Academy. Mr. Cyrus Knowles has presented a bas-relief, "War," by the late Mr. Harry Bates, A.R.A.

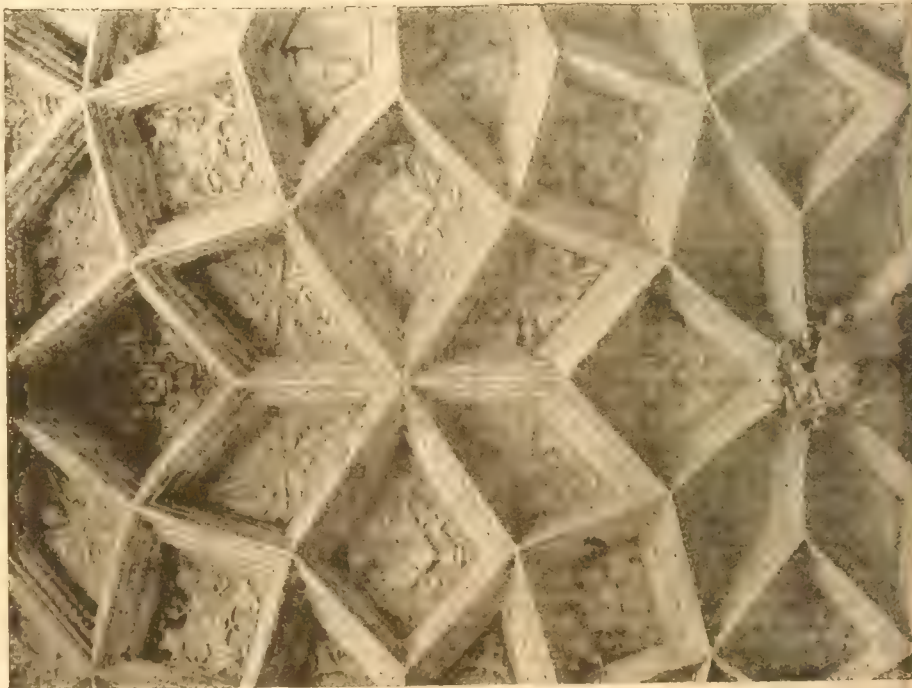
All these are placed in the National Gallery of British Art at Millbank, where also the statue of Eve, by Mr. Thomas Brock, R.A., presented by the late Sir Henry Tate, Bart., which was in the Paris Exhibition, has recently been placed. The following pictures have been purchased: "The Adoration of the Shepherds," a small predella picture by Luca Signorelli (1441-1523), hung in the Umbrian Room (No. VI.) in the gallery at Trafalgar-square; and a "Portrait of Mrs. Mary Anne Collman," by Alfred Stevens, the sculptor, hung in the National Gallery of British Art at Millbank. A Venetian picture, "Landscape with Figures," lent by the Victoria and Albert Museum, has been hung in the Venetian Room (No. VII.) at Trafalgar-square.



CHRIST CHURCH, SPITALFIELDS.—NICHOLAS HAWKSMOOR, Architect.

A SHORT HISTORY OF RENAISSANCE ARCHITECTURE IN ENGLAND.*

HANDBOOKS and short treatises, if well done, are of infinite use, as every student knows, for it is not always the thick and ponderous volume that proves the most reliable and accessible friend or source of information. Encyclopædias, especially the architectural ones, are not up-to-date successes, and in these days verbosity is a nuisance; while an attempt to give knowledge in a comprehensive way on every conceivable phase of a subject generally results in redundancy and unreliability. On the other hand, we doubt the utility of popularised guides, which for the most part are so superficial as to possess no value whatever. It may be a mere truism to say so, but there is no royal road to knowledge, which, after all is said and done, can only be acquired by study and application. The most successful teacher is the master of a ready method who seizes the main facts, and by associating the salient points to be remembered by the student, impresses them in a concise form on the mind in a mastering order. The emptiness of a mere smattering soon becomes evident, and learning as by rote a mere array of technical terms will be of no avail to anyone compared with a compact digest of any subject, particularly that of architecture. Mr. Reginald Blomfield has rightly hit upon the correct kind of abridgment of his larger history of Renaissance in architecture in England, a work of which we spoke in the warmest praise a few years since, when Messrs. George Bell and Sons, the well-known publishers, added his two artistic volumes to an architect's series of books of reference. The endeavour embodied in the present volume is to furnish

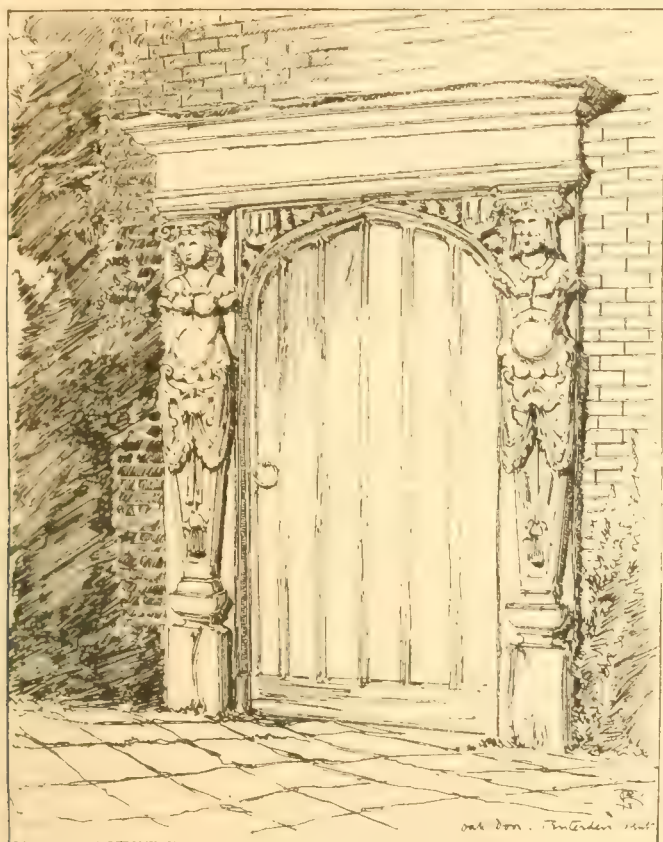


PLASTER CEILING, BISHOP WEST'S CHAPEL, ELY CATHEDRAL.

the general drift and causes which more or less governed the development and modification of the style as time went on, and while avoiding controversial details, the author has not hesitated to state his own views in a clear and logical fashion. We need not go over the field of investigation covered by Mr. Blomfield's pages, which commence A.D. 1500, and end in 1800: but we may

note the three main divisions, or three groups of facts to be considered in dealing with the development of architecture in this country since the days of the Renaissance. (1) The various isolated attempts of foreign workmen, in nearly every case Italians, to introduce their own methods of workmanship. (2) The efforts of half-instructed native builders and of Flemish and German

* A Short History of Renaissance Architecture in England, 1500-1800. By REGINALD BLOMFIELD, M.A. London: George Bell and Sons. 7s. 6d. net.



DOORWAY, TENTERDEN, KENT.

workmen. (3) The mature Palladianism introduced by Inigo Jones, a method, says our author, "so modified and adapted by his genius as to be the foundation of all subsequent architecture in England for the next two hundred years. These three types are so distinct that there is, as a rule, little difficulty in distinguishing instances. The third type is so clearly marked off by its predecessors, and so much more permanent in its results that the first two can only be regarded as byways of history, interesting indeed, and pathetic as the efforts of men groping in the dark, but off the main track of the Renaissance movement, and least of all to be taken as typical models of its methods. Besides, and outside these three groups, there are buildings which there is no reason to identify with Renaissance rather than with Gothic architecture—buildings which fairly represent the continuous building tradition of the country, such as Lake House, near Salisbury, and on a smaller scale cottages in every part of the country, and ranging down to the beginning of the present century. It is necessary to bear this fourth group constantly in mind, in so far as it was permanently present in the background of the English designers' mind, and led to innumerable modifications which differentiate the English Renaissance from parallel developments in other countries of Europe." The terracotta work at Hampton Court, some work in the choir of Winchester Cathedral, the sedilia at Wymondham, Norfolk; Laver Marney, Essex; the monument in the Oxenbridge Chapel in Brede Church, Sussex (1537); the famous tomb in Boxgrove Priory, near Chichester; and, foremost in importance the tomb of Henry VII. in Westminster Abbey. The screen at King's, Cambridge; Sutton Place, near Guildford, and the terracotta tomb in Oxburgh Church, Norfolk, are other examples.

For various reasons the Italians retired from this country after the death of Henry VIII., which ended a long nightmare of despotism. The architect in Elizabeth's reign had not yet detached himself in England as an independent designer from the general body of craftsmen. He was still in the position of master mason or carpenter who contracted for his particular trade, designing the details and using up stock patterns. The work was generally schemed by the owner, who provided materials; the men who put it into practical shape and employed the labour were "surveyors of the works," "clerk overseers of the works," and "clerk of the check," but never mentioned as "the architect."

The doorway, which we give from Tenterden, Kent, is an instance of this period. The work which it represents is picturesque; but as a type the style was marked by ignorance of the scholarship of architecture. The Orders are grouped and separated, and inverted, in singular disregard of the recognised canons in this type of building, and the proportions followed no rule but that of the builder's own consciousness. The German influence is observable, but its extravagances were avoided, while Longleat, parts of Knole, and some of the colleges at Oxford and Cambridge are undoubtedly to be classed as works of excellence, and are not wanting in distinction. Charlecote, in Warwickshire, though begun during the reign of Elizabeth, is very Gothic in spirit. The Germans and Flemings came over in large numbers, and their work naturally had a character of its own. Mr. Blomfield mentions several instances, and then follows a most useful chapter on English master builders—on John Thorpe and Smithson, of Wollaton. The house-planning of the 16th century is interestingly handled, with specimens from the Soane collection.

Inigo Jones and the last survivals of Gothic are subjects of the first consequence, and after being briefly dealt with, the development of English Architecture by Sir Christopher Wren fittingly follows. His pupils' work naturally comes next, and 'midst these, after Vanbrugh comes Hawksmoor, who entered Wren's office at the age of 18 as "his scholar and domestic clerk." Christ Church, Spitalfields, of which we give a view was one of his finest buildings. Its east end inside is remarkably treated, while in designing the tower the architect broke away from all precedent. It is wider on its W. and E. faces, and comes back to the square with curved ramps. The low, square stage above the belfry terminates in an octagonal steeple. The circular sweeps of the entablature on the N. and S. sides, and the little arched stage beneath, are its peculiarities. It depends entirely on its proportions and the disposition of its planes for its impressive effect, and is enriched, if we may use the term, by the absence of carving. The volume includes some suggestive papers on house-planning, carpentry, and plaster-work, from which last chapter we give the drawing of the ceiling of Bishop West's Chapel at Ely Cathedral.

At a special meeting of the Perth Town Council, held on Monday, Mr. John Lambert, Dundee, was appointed resident electrical engineer for the burgh.

VALUATIONS AND COMPENSATIONS.
VIII.

COMPULSORY SALE.

WHAT PROPERTY COMPANIES MAY REST ON—AKING, AND WHAT THEY CAN BE COMPELLED TO TAKE—TABLE XI.—IF LAND COMPULSORILY SOLD FOR A PURPOSE, VENDOR CAN COMPEL USE FOR THAT PURPOSE—IN CASE AND REASON—IF PART ONLY WANTED, OWNER CAN COMPEL TAKING OF ALL, IF CONNECTED—FIXTURES—IF NOTICE GIVEN FOR PART OR EJECTMENT, EFFECT OF NOTICE—COMPULSORY COMPANY TO TAKE ALL—LIBERTY OF OWNER TO DEAL WITH PROPERTY AFTER ACT PASSED UNTIL NOTICE SERVED—IF LESS THAN HALF-ACRE LEFT ON EITHER SIDE OF LINE, OWNER MAY COMPEL TAKING—OR EXPENSE OF THROWING—SAME IN ADJOINING PROPERTY MUST BE BORNE BY COMPANY—IF EXPENSE EXCEEDS VALUE, COMPANY MAY INSIST ON BUYING—COMPANY MAY TAKE SIX MONTHS TO ENSURE INTO CLAIM AND ABSTRACT OF TITLE—INTEREST SHOULD COMMENCE EARLY TO INDUCE SPEEDY COMPLETION—OWNER TO BE COMPENSATED FOR TEMPORARY OCCUPATION, OR FOR DAMAGE, THOUGH ACT ABANDONED—SUPERFLUOUS LANDS—SPECIAL RIGHTS OF ADJOINING OWNERS, AS TO SALE UNDER COMPULSORY POWERS—SOMETIMES UNDESIRABLE TO SELL UNDER COMPULSORY POWER—REQUIRES FROM CONVICTION OF FUTURE IMPROVEMENT—PROBABLE OBSERVATIONS OF COUNSEL—WHEN REFUSAL TO SELL CAN BE MADE—WHEN SAME CANNOT BE MADE—AS TO TIME WITHIN WHICH OFFER TO PURCHASE SHOULD BE ACCEPTED—CONSEQUENCE OF DEATH OR BANKRUPTCY BEFORE OFFER ACCEPTED—SPECIAL MOTTO—VALUE OF PROMPTITUDE—ENTRY UNDER COMPULSORY POWERS—SHOULD NOT BE PERMITTED—IF INSISTED ON, A DEPOSIT EQUAL TO WHOLE VALUE MUST BE PAID—IF THIS NOT DONE, INJUNCTION MAY BE OBTAINED—ENTRY CANNOT BE MADE ON PART ONLY—WHEN ENTRY CAN BE MADE—WHEN ENTRY CANNOT BE MADE—TABLE XII.—AVOIDANCE OF LEGAL POINTS—TITLE, HINTS AS TO WHAT LENGTH CAN BE REQUIRED—IF COMPANY REFUSE TO ACCEPT—TAKING POSSESSION NO ACCEPTANCE—IF PROPERTY INJURED BEFORE TITLE ACCEPTED—WHEN TITLE NOT DISPUTED—GOODWILL—EXPLANATION OF TERM—GOODWILL NOT REALLY SOLD—CLAIM FOR LOSS OF CONNECTION BY REMOVAL—MORTGAGEE ENTITLED TO AMOUNT ASSESSED FOR GOODWILL—ONLY AS FAR AS SECURITY IS SUFFICIENT—NO COMPENSATION FOR INJURY TO GOODWILL WHERE NO LAND IS TAKEN—STOCK—LOSS BY FORCED SALE—COST OF REMOVAL—DAMAGE THEREBY—LORD ELDON'S OPINION ON REMOVALS—IF NEW PREMISES CANNOT BE FOUND, CLAIM FOR COST OF WAREHOUSING—LOSS BEFORE SUITABLE PREMISES FOUND.

HAVING now disposed of the questions of what do and do not constitute sustainable claims, we propose to consider the nature of the property which companies may insist upon taking, and which they may be compelled to take.

LAND THAT CAN BE TAKEN.

Here a table may be of use:—

TABLE XII.

SHOWING WHAT CAN BE TAKEN, AND ALSO WHAT OWNER CAN COMPEL TO BE TAKEN.

All land* within the lines of deviation.

Also the lands they may be required to take, on the ground that they form part of a house or manufactory.[†]

Any land, though not authorised to be compulsorily taken, if parties willing to sell.

Only land *bona fide* wanted for the purposes of the Act.

If leaseholder's interest purchased, freeholder can compel company to purchase the fee simple.

Fixtures.

If land sold for a purpose under the compulsory powers, the owner can, after the sale, and even though he may have received the purchase-money, by the operations of the law, compel the land to be used solely for that purpose. ("Bostock v. North Staffordshire Railway," "Galloway v. Mayor, &c., of London," and other cases confirm this.) Though this appears to have little to do with the surveyor, a few words will show how pertinent it is.

If your client has a large estate, and you sell for him forty acres for a reservoir, and begin to let the rest of the land for large houses, what a detriment it would be if pleasure-boats could be let for hire, and regattas held thereon, bringing swarms of people to your select locality! We imagine but few have this knowledge of the legal power to restrain.

Much difficulty sometimes occurs where only part of the premises are required. The owner may object to sell part under certain circumstances. It appears that a part of a garden cannot be taken without taking the house—not even a summer-house at the end of the garden without taking the entire premises. The short rule to guide surveyors will be: No matter how extensive the gardens, if all connected by a

* The word "land," it must be remembered, extends to messuages, tenements, and hereditaments of any tenure, under the Lands Clauses Act, 1845.

† It is worthy of note that the sale will not entitle the purchaser to the mines thereunder.

‡ The quantity must not exceed, however, that prescribed in the special Act for extraordinary purposes.

§ This is important. Even if land within lines of deviation, the owner may refuse to sell if he can show it is not wanted for the purposes of the Act.

gravel-walk passing through the dividing walls, must be taken. A tunnel under a building would be taking a part of it, and therefore the whole must be purchased if required, the principle being "Cujus est solum, ejus est usque ad inferos."

Land, however, not connected—even though necessary to the house—cannot be required to be taken.

Fixtures.—The owner can compel the taking of fixtures, as, for example, engines, lathes, &c., even though they are tenants' fixtures, and could be removed by him during the lease.

Although separated by a public road, the owner may, if the purchase of property on each side, provided it can be shown that the premises really only form one warehouse or manufactory. It will often happen that a question will arise thus:—The Company having given notice for a part, and owner wishing to sell all, shall the owner give the company notice requiring them to take all? At first sight, you will say "Of course." But it is well to remember the effect. Notice requiring them to take the whole releases them from their "notice to treat," and they may elect not to take any. Another point often arises:—An Act is passed, years roll on, and nothing is done by the company. Your client wants to know what he is to do. His land was being built up to, and thus becoming building-land, when the Act was passed; or even more than this—it has been not merely built up to, but also beyond, either because he could afford to wait to get higher ground rent, or had not money to lend (advances to builders, as they are called) to induce speculators to take his land. Well, the Bill is passed. Must he wait quietly till they come to purchase, or may he go on trying to let? Mark the result if he does nothing. The company will contend it is only grass-land, and, therefore, worth little more than agricultural price. If he endeavours to prove his view by letting the land for building, the company will say it is a swindle to make them pay more money, and it is arranged between the owner and the builders. Yet see the result (we are not speaking of imaginary cases, but of those in which we have been concerned): He waits quietly, doing nothing, and at the end of four years receives a notice that application will be made to Parliament to abandon the line. In this case he gets no compensation. Knight Bruce, L.J., lays it down, and we think it is a generally accepted doctrine, that a man may do what he likes with the property until he receives the notice to treat. This seems fair; the notice to treat being in the nature of an agreement to purchase.

Where the canal, railway, or other works intersect land* so that they leave on both sides less than half an acre, the owner may insist on promoters purchasing the same. This only applies where owners have no land adjoining the portion left into which it can be thrown, so as to be conveniently occupied therewith. The expense of throwing such a piece of land into the adjoining, by removal of fences and levelling, to be at the expense of the promoters. It would seem, if the expense of such works exceeds the value of the piece of land (to be arrived at in the usual way), the promoters can compel the sale.

Six months appears to be the time a company may take to inquire into notice of claim and the abstract of title, though it is often longer. Where it can be obtained, it is wise to make the interest commence at an early date, thus inducing a more rapid completion of the matter.

The abandonment of an Act does not preclude owner from receiving compensation for temporary occupation, or for any injury or damage he may have sustained by reason of the exercise of the company's powers.

Superfluous Land.—Those lands which have been acquired under the Acts, and which are not necessary for the purposes thereof. There are special rights of adjoining owners to become possessed of them. As the descriptions of what he must do, and what notices he must serve, are lengthy, and seldom or never come under the surveyor's notice, we will not trouble our readers therewith; they belong more to the province of the solicitor. The only thing for the surveyor to remember is, that any land sold by him, if not required for the purposes of the Act, may be acquired by his client on certain terms. The price to be settled by arbitration.

Set-off and Compulsory Powers.—It often happens that it is not, in your opinion (or your

client's), advisable to sell under the compulsory power. You may consider your client's land worth more than you feel a jury or arbitrator will give. This will happen where you, knowing well the locality, are confident that in a few years great increase in value will accrue, from causes that you feel it will be most difficult to convince others of. We would here parenthetically remark that the mere statement of these causes is sure to bring upon you, in the speech of the counsel for the company, observations which are not pleasant to hear, as, for instance:—"Would never have heard of such prospective hidden advantages, but that a company wants to buy;" "Curious, gentlemen of the jury, that the possibility of these great improvements has only just occurred to the surveyor of the claimant. More curious that such improvements will occur not now, but a few years hence, and you are asked to give more money now on the mere statement of technical witnesses called on behalf of him (or her) who wishes to get as much as possible out of a company. Gentlemen, I must ask you to treat such statement as chimerical, and, as business men, give, as you will feel bound to do, the present value," &c. In such cases it is sometimes best to explain your views fully to your client, and to endeavour to avoid selling. The question will then have to be considered, whether this can or cannot be done.

You may refuse to sell when the compulsory powers of purchase of the company have nearly expired, and it can be shown that it is impossible for them to take the initiatory steps towards purchasing the land in question.

You cannot refuse to sell where you have waived the necessary notice; for you cannot set up that it has never been received.

If a notice be given, and you give a counter-notice, and the company do not assent until after the expiration of the compulsory powers, still you are bound to sell.

The company would be bound, however, to take the property comprised in counter notice.

As to time within which offer to sell should be accepted.—The next question will be, within what time should an offer to purchase land be accepted? This question is one that concerns the surveyor most intimately. An offer is made. Well, he consults his client, and his client may naturally require time to consider, and to make his decision. He may probably say, "How long may I take?" It is laid down that the offer must be accepted within a reasonable time. The surveyor will therefore do wisely in advising a prompt decision.

The law is, that if the person who makes the offer dies or becomes bankrupt before offer is accepted, the land is not bound.

Always be prompt in dealing with all compensation claims. The reason is, you may lose rights of injunctions if you are not—much to the prejudice, it may happen, of your client.

Entry Under Compulsory Powers.—The threat is often made by companies, "We shall, under our powers (Lands Clauses Act, 1845), enter at once." We always refuse to permit it. Experience has taught us that it is most difficult to get a settlement when the company is in possession. Explain that you are willing to proceed at once to value, but they must not take possession until the compensation is paid. Generally you will do better for your client by so doing. It rarely happens that a company has both complied with the Act and can show that the demand for the land is so urgent as to entitle them to enter.

You will sometimes, however, be startled by your client coming to you to say that the promoters or company have taken possession of his land, and are cutting up the turf, or otherwise injuring his property, and blaming you for neglect in permitting it. We will give the cases in which the company may, in defiance of you, take possession, and where they cannot. This will enable you to explain the position to your client.

Where a company enters *no less volens*, remember they must pay into bank the whole value of all the land comprised in the notice to treat. If they pay less, an injunction to restrain them may be obtained. They cannot enter on less land than is comprised in the notice to treat.

They can enter before making compensation:

If the necessity of immediate entry is so urgent as to preclude them from following the slower modes of procedure.

Where they have deposited the purchase-money.

Where they want to enter merely for surveying and taking levels of such lands, and of probing or boring to ascertain nature of soil, and of setting out the line of works.

Notice, not less than three, or more than fourteen, days is necessary to owners or occupiers of such lands where no previous consent. It is well to remember that compensation must be made for damage done.

Where there is an equitable mortgage.

But it appears that if insufficient is paid into court to meet the amount of such mortgage, the mortgagee of the equity is entitled to be placed in the same position as if the company had purchased the equity of redemption. Of course, in practice, the company should not disregard so important a personage; if they do, they cannot complain.

Where, while not proposing to take the land, they yet injuriously affect it. Nothing can prevent their so doing, and they may execute their works.

The remedy of those injured must be sustained in a different manner.

Where licence has been given.

Such licence cannot be revoked, it must be borne in mind.

Should the company, however, take possession under any of the above-mentioned powers, you will do well to advise your client to send in all particulars of claim; which, if not agreed to (it would seem the amount must exceed £50 in this case), or if they do not proceed to summon a jury within twenty-one days, when required by the claimant, this will become an absolute right. We confess, however, that in our experience we have never had or heard of such a result being obtained. It is worth mentioning that the claimant does not lose his right to have his claim assessed by a jury, because he may have failed to make a claim previous to the entry on his land.

They can enter, although the character of the ground will be materially altered by the operations they make.

Even should their works prevent a jury from forming a correct estimate of the value of the land, it is no ground for an injunction to restrain.

THEY CANNOT ENTER: Unless they can show the necessity of urgency.

As an illustration: A company cannot take possession under a valuation made two years prior to an attempt to exercise the compulsory powers of entry, because the fact of not exercising their powers for so long a time is sufficient evidence that there is no urgent necessity for immediate entry.

Until the money is deposited in a bank.

[The method of deposit does not come within the province of the surveyor. We therefore will not burden his memory therewith.]

Until award made.

Until verdict given.

Or if no award made or no verdict given, until a surveyor appointed by two justices [in a certain manner the details we need not give] determine the value of the lands or the interests therein.

Such money must be deposited as above mentioned—or it would appear in this case a bond must be given, in a penal sum, with interest, without depositing the money.

The Company cannot make a tunnel under lands without paying or depositing compensation as if land taken.

The Company cannot take, if lands mortgaged, unless sufficient deposit made to compensate mortgages for being paid off before the proper time.

This applies also to persons having an equitable lien, the company being bound to settle with them before taking possession.

In order to make this portion of our subject more easy for reference, we will here give a Table of the cases in which a company may and may not insist upon entry before making compensation.

TABLE XIII.

They may—

When necessity can be proved urgent.

When purchase-money is deposited.

On not less than three days' notice, for surveying, levelling, or probing.

Where there is an equitable mortgage.

Where land is injuriously affected, not proposed to be taken.

Where license has been given.

They may not—

Unless urgency can be shown.

Until purchase-money is deposited.

Until award made.

Until verdict given.

If land mortgaged, unless mortgages compensated.

We avoid purposely all that which relates to the strictly legal portion of our subject—as, for instance, the validity of bonds; who may and who may not give them; the power of justices and the Board of Trade; lien, and its enforcement; declaration of lien; wilful entry; warrant to sheriff where refusal to give land—as these matters, though they come before us, do so only properly in conjunction with our client's legal adviser. For this reason also we do not propose to deal with the Title question, as that belongs to another profession. But some few hints will be of advantage, more especially as the law says every man is supposed to know the law, and is treated accordingly.

No longer title than sixty years can be claimed.

If the company refuse to accept the best title that the vendor can make, he may call upon them to complete or abandon the contract.

The mere taking possession of property and making even slight alterations therein is not, it would seem, necessarily an acceptance of the title.

But if property taken possession of is injured before acceptance of title, company cannot elect; they have to pay purchase-money into court.

When the title is not in dispute, the company have a right to possession for six months after notice of claim.

Goodwill.—The next point which must engage our attention is that of "goodwill," as it is commonly termed, and this is certainly a troublesome element in dealing with compensations. It is not really "goodwill" that is sold, although many surveyors so call it; the claim is for the loss that will accrue from the removal. Let me explain this more fully, as it is very important and not generally understood. Suppose a tradesman sells to another the lease and goodwill of a shop; he has a claim for the value of the lease, the fixtures, some stock (probably), and then adds a sum for the value of his connection. This is what is probably understood by the expression "goodwill." Now assume the sale to a railway company. He does not sell his connection to the railway, who do not want it, and who never stipulate that he shall not carry his connection with him. He clearly, therefore, does not sell his goodwill in the sense above mentioned; but he has a claim for any damage that may accrue to him through loss of connection in consequence of removal. Where your client cannot obtain other premises in the immediate neighbourhood, it may be necessary to make a special claim for injury, as sometimes, in such a case, the whole of the connection may be lost. This will apply only to such trades as are of a purely local character. A brewer can claim for the loss of sale of beer to a public-house, where the lease contained the covenant that he was to supply it. Beyond the value of the lease, he would be entitled to compensation on the loss he would sustain by the pulling down of the house, and the consequent ceasing of the demand for beer.

The legal definition of what goodwill is, is pertinent to this subject. Amongst the public it is generally considered as something appertaining rather to the individual shopkeeper than to the lease; yet the legal decisions affirm that the mortgagee to whom the premises are mortgaged is entitled to any amount that may be assessed for goodwill. This shows clearly it goes with the house, and not with the occupier or lessee.

Please understand it is not meant that the mortgagee is to make a profit out of goodwill; but if his security is insufficient, that then he may take so much out of the goodwill assessment as will bring him "home," to use the technical expression.

Most recent decisions give no compensation for injury to goodwill, or for loss of profit, where no land is taken.

The essence of compensation, as recently decided, is that some injury must be shown to rights in land, and that injuries to goodwill or to loss of profit in business incurred on upon land not taken are not entitled to compensation.

Stock.—The next head of claim is very confusing to the surveyor, and arises where a client, having to remove, cannot realise the full value of his goods. He is compelled to sell them in a hurry, and, of course, to obtain prompt sales, must sell at a sacrifice. It is to reimburse such loss that the claim is made. It sometimes happens your client prefers to remove his stock to his new premises, and there sell them in ordinary course, to running the risk of loss by forced sale. In this case the claim will be for cost of removal and possible damage thereby. It will surely be contended that any damage arising

in consequence of the removal is due to the carelessness of the owner or his agents, and cannot, therefore, form a claim against the company. Should such an answer be raised, the reply will not be amiss that was made by the celebrated Lord Eldon, that "three removes were equal to one fire."

Now assume that your client cannot find any premises into which to remove his stock direct from the old premises, and that his stock is of such a nature that it cannot be suddenly realised—say, for instance, a patent article, such as a knife-cleaning machine, medical apparatus, or some such articles, which, while bulky, could not be sold at all at any sacrifice, as such sales would permanently injure the value. Here, if it can be shown that due diligence has been used to obtain new premises, the fair charge for warehousing the stock should be added to your claim.

A tradesman can claim for the loss he may sustain before he can obtain other suitable premises.

THE SURVEYORS' INSTITUTION.

STUDENTS' PRELIMINARY EXAMINATION.

OF the candidates who presented themselves at the preliminary examination of the Institution, held concurrently in London, Manchester, Dublin, and Glasgow on January 16 and 17, the following satisfied the examiners:—

Jack Trevor Abrahams, 45, Warrington-crescent, Maida Vale W.; Roland Seymour Andrews, 83 Kingston-road, Oxford; Oliver Wylie Allen, 8, Frederick's-place, Old Jewry, E.C.; Ernest Ralph Appleton, The Gables, Eaglescliffe, R.S.O., Durham; Frank Leslie Baker, Emery House, Bishop's Stortford, Herts; Edwin Goodenough Bayly, Beechcroft, Berkhamstead, Herts; Howard Clifford Beaven, Dodinghurst, Essex-road, Enfield, N.; Reginald Lewis Joshua Bedford, Murrance, Horn-lane, Acton, W.; Reginald Henry Wapshott Bennett, 20, Kenilworth-avenue, Wimbledon Park, S.W.; Charles Edward Benton, Heck House, Grimsby, Lincolnshire; Cyril John Berry, Burton House, Bolingbroke-grove, Wandsworth Common, S.W.; Basil Frederic Blois, Hurlingham, East Cuff, Bournemouth, Hants; Lionel Victor Bowler, Green Bank, York-road, Southend, Essex; Thomas Howard Bowler, The Precincts, Canterbury, Kent; Horace Brown, 42, Southgate, Chichester, Sussex; William Ernest Brown, 33, Parkgate-road, Chester; Alan Hillersden Bulteel, Charlstown, St. Austell, Cornwall; Herbert Burch, 66, Cromwell-avenue, Highgate, N.W.; Edward Cecil Burgess, 127, Foadwyche-road, West Hampstead, N.W.; Ralph Henry Burston, 9, Cobden-place, Hailsham, Sussex; Charles Ralph Campbell, 14, Gledhow Gardens, South Kensington, S.W.; William Joseph Carlisle, care of Canon Fleming, Pitt-street, Gloucester; John Graddon Chapple, 95, Mill Hill-road, Acton, W.; Arthur Chard, Thorverton, Devon; Alfred Howard Clarke, Ashbourne, The Drive, Walthamstow; William Cecil Clemens, 187, Union-street, Plymouth, Devon; Charles Stanley Cobb, Strathfieldsaye, Hampshire; Howard Cooper, Dashedwood, Gravesend, Kent; Harold John Culpin, 74, Grosvenor Park-road, Hoe-street, Walthamstow, Essex; Harold Darby, 6, Cliff-street, Bridlington, Yorkshire; William Gwynne Batchelor Davies, Penner House, Newbridge, near Newport, Mon.; Arthur Chatterton Dorrington, 41, West-road, Lancaster; William Marshall Dugdale, Llwyn, Llanyfyllin, Gwent; Spencer Edwards, 30, Park-road, Polsoe-road, Exeter, Devon; Charles Eggar, 10, West-street, Farnham, Surrey; Frederick Charles Groome Ellen, Eastfield House, Andover, Hants; Rae Adam Ellis, The Warren, Winstead, N.E.; Charles Stokes Eaton Evans, Avallanau, Haverfordwest, S. Wales; George William Ferris, 141, Sutherland-avenue, Maida Vale, W.; John Alexander Platt, Norman House, Blake Hall-road, Winstead, N.E.; John Henry Fenning, Fairfield, Ashburnham-road, Bedford; George Frederick Finch, 4, Wortersville-road, Hornsey, N.; Archibald Keith Foulis, Roselea, Orchard-street, Motherwell, N.B.; Ernest Leonard Frost, 164, Croydon-road, Anerley, S.E.; Harold James Gale, Garsington, Wheatley, Oxon; Thomas M. Glasson, The Agricultural College, Aspatria, Cumberland; Tom Keeping Glog, 36, Vardens-road, Clapham Junction, S.W.; Percy Walter Gregory, 44, Haverstock-hill, N.W.; Oliver Greenwood, Wood Lea, Todmorden, Lancashire; John Campbell Grierson, 27, Newsham-drive, Liverpool, Lancashire; Ernest Mount Haes, 7, Grove-road, Surbiton, Surrey; Vernon Manning Hall, 5, Wedderburn-road, Hampstead, N.W.; Edward Charles Harris, 85, Broderick-road, Upper Tooting, S.W.; Eric Thomasset Haslehurst, Claverley, Finchley, N.; Edward Robinson Hawkins, Downham Market, Norfolk; Joseph Bereton Hayward, Claremont-road, Bath, Somersetshire; Geoffrey Steele Henderson, St. Margaret's, Kilmarnock, N.B.; Herbert Arthur Hinton, Belvedere, Shepherd's-hill, Highgate, N.; Stanley Hooper, 35, Cecil-road, Upton Manor, E.; Robert Llewellyn Honey, 5, Gordon-terrace, Rochester, Kent; John Nixon Horsfield, jun., 11, Penrhyn-road, Kingston-on-Thames; Edmund Howard, Stafford House, Grove-road, Snarebrook, Essex; Ernest Edward Victor Ives, 4, Denmark-terrace, Mundesley-road, North Walsham; Ernest Cory Jarvis, 33, Louisville-rd., Upper Tooting, S.W.; Stanley Bernard King, Waverley, Albert Park, Abingdon, Berks; William Herbert Lambie, 14, Chichester-street, Paddington, W.; John Clay Lucas, Castle Precincts, Lewes, Sussex; Alfred J. Lyddon, 38, Desborough-road, Plymouth, Devon; Michael Lewis Lyon, 315, Fulham-road, S.W.; John Edward Gerard McSheehy, 23, Denmark-avenue, Wimbledon, S.W.; James Matley, 491, Ashton-road, Oldham, Lancs; Edmond Meacher, Messrs. Rawlence and Squarey, Salisbury, Wilts; Cecil McEllan Myott, 6, St. Andrew's-street, Cambridge; John Stuart Naylor, Edenthorpe, Beckenham, Kent; Arthur O. Noakes, 98, Blenheim-gardens, Willesden-green, N.W.; Oscar Travey Nettleton, 47, St. Mary Abbotts-terrace,

Kensington, W.; Harry Bertram Owen, Lonsdale Villa, Florence-street, Newcastle, Staffordshire; John Oswald Payne, The New Farm, Bromley, Kent; Charles Frederick Peile, Rosemont, North Finchley, N.; George Lionel Pepler, Lynton, Haling Park-road, Croydon, Arthur Percy Pickersgill, 2, Cambalt-road, Putney-hill, S.W.; Edward Thomas Frederic Pope, Athelstan House, Margate, Kent; Percy Havery Rose, 37, Mercers-road, Holway, N.; Thomas Rule, The Agricultural College, Aspatria, Cumberland; Arthur Salway, The Cedars, Broxbourne, Herts; Willie Stanley Venn Sansom, 71, East Hill, Colchester, Essex; Thomas Edward Scammell, 56, Lower Redland-road, Redland, Bristol; John James Shardlow, Narborough-road, Leicester; Arthur John Shield, Oakhurst, Cressington-park, Liverpool; Frederick Mitchell Skelt, 64, Fairlop-road, Leytonstone, N.E.; Sidney William Smith, The Limes, Aubrey-ride, Cheshunt, Herts; William Boulton Smith, 37, Factory-road, Hinchley, Leicester; Clifford Thomas Steward, 65, Courtfield-gardens, S.W.; Nigel Desmond Stewart, the College of Agriculture, Dunston, Salisbury; Thomas Tivendale, 34, Park-lane, Stoke Newington, N.; Cedric Walter Unsworth, 113, George-street, Altrincham, Cheshire; Astley Allan Vigers, The Hurst, Hershams, Walton-on-Thames; Percy Deering Voysey, 22, Melbourne-street, Exeter, Devon; Irving Wall, Brookfield, Cambridge-road, Huddersfield, Yorkshire; Sydney James Walter, Ecclesbourne, New Winstead, E.; Arthur Harvey Wells, Hill-side, Ashby-de-la-Zouch, Leicestershire; Arthur Vivian White, The Poplars, North End, Portsmouth, Hants; Harold William Whitton, Caswell, near Towcester, Northamptonshire; William Osborne Wightman, York Lodge, Warham-road, South Croydon; Hubert William Wilkinson, Highfield House, Winchmore Hill, N.; Harold Williams, Eridge House, Chichester-road, Croydon; Harold Wood, Bridge House, Grimsby, Lincolnshire; Ernest Edward Woodbridge, Cartref, Roxborough Park, Harrow-on-the-Hill; James Percy Woodhams, 60, Havelock-road, Hastings, Sussex; Bertram Worrall, Crimsworth, Whalley Range, Manchester; Herbert Oswald Young, Eversley, Egerton Park, Rock Ferry, Cheshire.

* Bracketed equal for head of List.

OBITUARY.

WE regret to announce the death of Mr. JAMES FRANCIS WOODHEAD, the surveyor of the Duke of Devonshire's building department at Chatsworth, which took place at Pilsley, near Chatsworth, on Saturday last. Mr. Woodhead was in his 49th year. He spent some years on the Welbeck Estate, and then returned to Pilsley to assist his father, and eventually he was appointed surveyor of buildings on the Chatsworth Estate, in which capacity he carried out large and important improvements in the mansion and upon the estate, amongst these the reconstruction of the large conservatory, and the installation of the electric light. Mr. Woodhead was a member of the Dorothy Vernon Lodge of Freemasons, No. 2129, and held the office of junior warden.

MR. EDWARD CLARKE CABOT, the head of the profession of architecture in Boston, Mass., died last week at his home, at the age of eighty-one. Born of an old and distinguished Boston family, Mr. Cabot learned his profession, like most practitioners of his generation, mainly by himself, but no more refined and scholarly work has ever been done in the United States than that which he designed. He was, says the *American Architect*, a skillful water-colour painter, and frequently contributed his works to the local exhibitions, but in architecture he found the widest field for his great and refined talent. The best of his buildings is the Boston Athenæum, on Beacon-street, in the Italian Renaissance style; but he is best known by the Boston Theatre. Mr. Cabot, at first either alone, or in connection with his brother, Mr. F. Elliot Cabot, and, later with Mr. Chandler, now Professor Chandler, of the Massachusetts Institute of Technology, designed a great number of buildings. It was Mr. Cabot, we believe, who set the fashion of painting wooden country-houses of an olive green, to harmonise with the foliage about them, and when his own house was built, he modelled with his own hands in the wet plaster a frieze of leaves and flowers, which was afterwards painted. Mr. Cabot was for many years president, and recently honorary president, of the Boston Society of Architects. Some ten years ago he retired altogether from practice, his failing health obliging him to confine himself closely to his home.

The joint committee of the Brompton and Hallowell Rural District Councils have instructed Mr. Harry W. Taylor, A.M.I.C.E., of Newcastle-on-Tyne and Birmingham, to prepare schemes of water supply and sewerage for Gilsland.

The "Year Book" of the Society of Architects, just issued, shows a total of 534 members, 18 hon. members, 10 associates, and 21 students, in all 583 names on the roll, against an aggregate of 564 names at the corresponding period last year, when the members numbered 521, the hon. members 18, the associates 11, and the students 14.

COMPETITIONS.

BRISTOL WORKHOUSE INFIRMARY.—This important competition for a new infirmary to accommodate 1,000 beds has now been settled. The committee of the guardians dealing with the matter have considered the award of the assessor, and find that the three designs considered by him to be entitled to rank as the best and awarded the premiums are:—(1) Mr. H. Percy Adams, F.R.I.B.A., 25, Woburn-place, Russell-square, London, £200; (2) Messrs. Giles, Gough, and Trollope, 28, Craven-street, Charing Cross, £150; (3) Mr. Arthur Marshall, Nottingham, £100.

GLASGOW ROYAL INFIRMARY.—The Glasgow Institute of Architects have forwarded a memorial to the managers of the Royal Infirmary protesting against the action taken in the recent competition. They say: "We attribute the failure not to any lack of zeal on the part of your committee, or of ability on the part of the competing architects, but mainly to the manner in which the competition was initiated and carried through, and that in the following respects among others:—1. That along with the printed conditions provided for the competition there were issued two sets of sketch plans as indicative of alternative arrangements which the sub-committee recommended, and which were stated in the accompanying report to be drawn by or under the direction of two members of the sub-committee respectively. 2. That a Jubilee block to be situated on a particular part of the site was insisted upon as an integral part of the scheme. The results of these elements in the conditions were:—(a) That the competitors and the assessor were hampered in the exercise of their individual judgment as to the main points of importance in such a building—viz., the distribution of the various buildings with respect to each other for convenience of working and of all for the freest access of sun and air. (b) That the competitors were placed in the invidious position that, in the event of the schemes recommended by the committee not proving themselves to be in accord with their judgment and experience, they were bound, in departing from them, to meet with disapproval from those influential members of the committee who would enter upon the examination of all the plans with minds necessarily biased in favour of those which they themselves had put forward, while reserving their position as judges. (c) That as the result, the proposal that plan E be accepted, which became the finding of the meeting, was moved by the gentleman who was actually the author of the scheme which was adopted and worked out in detail by this competitor. 3. That neither of the sketch-plans issued are in accord with the present-day principles of hospital design, as might, indeed, be expected, seeing that their authors have not enjoyed the training which would qualify them as surgical, medical, or architectural experts: that, in fact, the plans are in many vital particulars inadequate and out-of-date, and that these faults are naturally displayed equally in the selected design, which is but an elaboration of one of them. A corroboration of this assertion with regard to the radical faultiness of the plans in question is furnished by the fact that six out of the ten competing architects found it necessary, in spite of risk of possible consequences already alluded to, to entirely throw over the schemes furnished to them, and that among this number are found all the four architects from outside of Glasgow (two from London and two from Edinburgh), who were presumably invited specially on account of their knowledge of hospital design." The Institute urge the managers, before committing themselves and the public to the erection of any portion of the building, as designed, to have the plans submitted to one or more independent hospital authorities of recognised and outstanding position for consideration and report. They also unanimously lodge a protest against the setting aside by the sub-committee, without any reason given, of the award of the professional assessor, Dr. Rowand Anderson—the more so that a simple majority of one was considered sufficient to overturn his judgment—as liable to prejudice the success, alike for promoters and architects, of future competitions in Glasgow. And they further state that the erection of a Jubilee block, such as is proposed, seven stories high, and in the position selected will, if proceeded with, dwarf and irretrievably injure for all time the external appearance of the cathedral.

LOWER CLAPTON.—Plans prepared by Mr. J. Williams Dunford, M.S.A., architect, of 100c,

Queen Victoria-street, E.C., for alterations and additions to the United Methodist Free Church, Lower Clapton, have been placed first in a limited competition.

THE STRAND IMPROVEMENT SCHEME.—The competition for this great Metropolitan improvement seems likely, after all, to be followed by practical results—at least, to this extent: that the London County Council has determined upon going forward with the work; and we hear on good authority that Mr. Henry T. Hare, F.R.I.B.A., the author of design No. 26, which, no doubt, was the most popular of all submitted, has been chosen as the architect. We also understand that his original design has, in a general way, been adopted—subject, however, to some modifications, one of which will insure a range of shops extending practically through the whole extent of the frontages, and it remains still somewhat undecided as to how far the central block of the composition will be utilised as public offices; though it is to be hoped the idea of erecting a suitable home for the London County Council on this part of the site will not be abandoned. The erection of the new Gaiety Theatre will necessarily form part of the scheme, and its exterior, it is stated, in any case, will form a distinctive and essential feature in the whole composition. This part of the work will be carried into execution under the supervision of Mr. Ernest Runtz, architect to the proprietors of this well-known playhouse. The façades of other buildings, for which sites have already been provided on the new line of frontage, will also have to conform to Mr. Hare's design, which was illustrated in our issue of Nov. 2, 1900, and which will be remodelled on the lines which we have indicated.

SWANSEA NEW HARBOUR OFFICES.—Theninety-seven designs submitted for the proposed new harbour offices have been carefully considered by Mr. W. M. Fawcett, M.A., F.R.I.B.A., of Cambridge, the assessor nominated by the president of the Royal Institute of British Architects, with the result that the referee in his report placed the design numbered 39 first in order of merit, and that numbered 93 second, and mentioned also those numbered 2 and 24. The executive committee of the trust decided to adopt his recommendation, and accordingly to accept, subject to the conditions, the design numbered 39. The decision having been made, the sealed envelopes containing the names of the authors of the designs mentioned in Mr. Fawcett's report were opened, when it was found they were as follows:—No. 39, placed first, Mr. Edwin Seward, Cardiff (£100 premium); No. 93, placed second, Messrs. Fairhurst and Thornley, Blackburn (£50 premium); No. 2, favourably mentioned, Messrs. Stones and Stones, Blackburn, and Mr. W. Edwardes Sproat, Glasgow; No. 24, favourably mentioned, Mr. Wm. C. Laidlaw, Edinburgh. The site is situated at the corner of Somerset-place and Adelaide-street, overlooking the post-office and not far from the town-hall, with a rear frontage in Pier-street. The accommodation provides a shipping office, 50ft. by 30ft. Offices for the accountant and solicitor and clerk will be on the ground floor; the board-room, with superintendent's and engineer's offices, on the first floor. The cost is limited to £12,000, and it is a condition of the competition that a tender from a builder shall be obtained to do the work for the amount stated in the architect's estimate.

In the case of the application on behalf of Samuel Ransom, carrying on business as Ransom and Co., Britannia Works, Kensal-road, W., staircase manufacturer, the order of discharge from bankruptcy has been suspended for five years, ending Dec. 21, 1906.

Arrangements are now nearly complete at Southampton for the commencement of the tramways extension through St. Mary-street and district, which, by resolution of the Corporation, has to be paved with wood blocks. In connection with the work application is to be made to borrow £3,998.

The sale of the site and buildings of the Indigent Blind Schools, situated in St. George's-circle, S.E., has been completed. The consideration money arranged by Mr. Reginald Roumieu, who acted as surveyor to the schools, was £140,000. The purchasers were the Baker-street and Waterloo Railway Company, who were represented by their surveyor, Mr. Leslie R. Vigers, and who will erect on the site a generating station for their system, which has authorised powers to construct an underground line from the Elephant and Castle to Farringdon.

Building Intelligence.

CANTERBURY.—The City Corporation have at length obtained the consent of the Lunacy Commissioners to a modification of the plans for the City Lunatic Asylum now in course of erection on the Stone House Estate. Mr. W. J. Jennings, M.S.A., of Canterbury, is the architect. The Corporation is to do the best it can for £70,000, the sum estimated to be required before the Commissioners added to the plans. £26,000 have already been spent, and with the balance of £44,000 it is estimated that two blocks, each to accommodate 50 patients in association wards and 10 private patients, can be built. Accommodation has already been provided for 20 males and 30 females, so that the total capacity of the Asylum when completed will be for 170 patients. The plans as extended by the Lunacy Commissioners provided for about double this number, although Canterbury's pauper lunatics average from 60 to 70 only, and at the prices now ruling in the building trade involved a total estimated expenditure of £120,000.

RICHMOND, SURREY.—New infirmary buildings are being added to the workhouse from plans by Mr. Edward J. Partridge, F.S.I. Six separate buildings are now being erected by Messrs. S. N. Soole and Son—viz., female infirmary block, lying-in ward, nurses' home, male infirmary, lunatic wards, and ambulance house and mortuary. The five blocks intended for habitation each run longitudinally N.E. and S.W. The female and male infirmary blocks are connected on each floor by corridors, from which short branches connect to the lying-in ward and nurses' home. Along the centre of the ground-floor main corridor a trench is formed, in which the various mains will be placed. The female block comprises:—Ground, first, and second floors, each containing a large ward of 24 beds, a smaller ward of three beds, a day-room and duty-room, besides larder, linen-store, brush-store, and sanitary accommodation. In connection with the iron external staircase is a balcony along the whole of one side of this large ward. The floor will be laid with pitch-pine blocks. The walls will be plastered, and the junction between the floor and wall will be formed with a slight hollow. The day-room is 20ft. in length, with a bay window at one end. The larder and stores are opposite the day-room. The sanitary annexe is separated from the main building by a cross-ventilated lobby. The lying-in ward is placed next to the female infirmary. The accommodation comprises a lying-in ward for six beds, two labour-rooms, duty-room, larder, bathroom, and store. The ward has separate w.c.'s and slop-sink, approached through a cross-ventilated lobby. The dispensary is arranged in this block, but is approached by separate entrance from the corridor. The nurses' home is placed between the lying-in ward and the male infirmary, and consists of three floors, from each of which access is obtained to the main corridor. On each floor is a central passage or corridor, with the various rooms opening directly from it. The male infirmary, the next block, is similar in general arrangement to the female infirmary before described, and provides, as the other block, provision for 81 inmates. The fifth block is that for the reception of lunatics. The building consists of a ground-floor only, and comprises two separate two-bed wards, with attendant's room adjoining each, fitted with supervision window and a padded-room. The whole of the building will be erected in stock brickwork, with deep red brick facings, relieved by lintels and strings of Portland stone, and the roof will be covered with green slates.

St. PANCRAS.—The Bishop of Islington consecrated on Wednesday week the Church of All Hallows, North St. Pancras. The building was commenced twelve years ago, and was intended to be the permanent Church of the Good Shepherd, but when All Hallows, Thames-street, was pulled down and the site sold a portion of the proceeds was given to this church on condition that it was named after the one pulled down. The architect is Mr. James Brooks, and the style is severe Early English. The exterior is of Derbyshire rag, and the interior of Portland stone. The cost of erecting the nave and side aisles has been about £17,000, and there is seating accommodation for 1,200. When the chancel is added there will be room for an additional 300 seats.

SOUTH SHIELDS.—New offices are being erected for the Sunderland and South Shields Water

Company. The building will have a frontage of 43ft. to the Market-place, and 92ft. to Chapter-row, and will cover double the area occupied by the present offices of the company and workshops. It is planned in two departments, one for office and public use, and the other for workshops. The building, which is Free Renaissance in character, has elevations to both Chapter-row and the Market-place, the latter being built on the ground floor with polished red and grey granite. The upper stories are finished in red brickwork, relieved with moulded and carved stonework, and the whole surmounted by a stone turret. The basement comprises cellars for pipe storage, and heating apparatus. On the ground floor there will be a general office approached through a tiled hall. Communicating with the general office is a manager's room, strong-room, telephone-room, &c. The remainder of the ground floor is devoted to workshops, &c. The first floor is approached by a stone staircase, and contains a board-room, outdoor inspector's and other offices, and additional workshops. On the top floor a suite of dwelling-rooms has been provided, together with further offices and store-room. The building will be largely of fireproof construction. The work, which is expected to cost between £7,000 and £8,000, is being carried out by Mr. R. Allinson, of Whitburn, from the designs and under the supervision of Mr. Henry Gieves, A.R.I.B.A., of South Shields.

CHIPS.

The death occurred at Derby on Sunday night of Mr. Thomas Owen, M.Inst.C.E., inspecting engineer of permanent way materials for the Midland Railway Company.

Messrs. E. H. Shorland and Brother, of Manchester, have just supplied some more of their patent Manchester stoves to the Union Infirmary, Guildford.

The town council of Edinburgh accepted, on Tuesday, estimates amounting to nearly £5,000 for the erection of houses for the working classes at Potter-row.

Messrs. Wm. Potts and Sons, clock manufacturers, Guildford-street, Leeds, have just erected a new turret striking clock at Wykeham Church, Yorkshire, which strikes the hours on the large, or tenor, bell, and shows the time upon one large external dial, which faces down the main street of the village towards Wykeham Abbey, the residence of the Right Hon. Viscount Downe, the donor of the clock. The tower is some 40 yards or so distant from the church, and formerly the bottom part of the tower was used as a lock-up for prisoners. Messrs. Potts and Sons are also making a new quarter-chime clock for the ancient parish church of Lavingham, on the North Yorkshire Moors, and a new illuminated clock, with three external dials, for Scarborough.

Tom Richardson, a workman, was on Saturday charged at Westminster Police-court with having stolen several kitchen stoves and other articles from the premises of Messrs. Harrison and Spooner, builders, Crozier-street, Lambeth. He had driven up with two men and presented a note to the person in charge of the premises, stating that they were to be allowed to remove the articles. Stoves, piping, slates, and other goods to the value of £15 were taken away. Information was given to the owner, which led to a description of the three men being supplied to the police, and to the arrest of the accused. A remand was granted.

Considerable opposition was raised at Southend-on-Sea by builders and others on Thursday in last week, when Mr. H. P. Boulnois held an inquiry, on behalf of the Local Government Board, into the application of the town council for sanction to borrow £16,250 for the purpose of erecting sixty houses under the Housing of the Working Classes Act, 1890.

At Moulton, on Thursday in last week, the Bishop of Lincoln dedicated the memorial to the late Rev. J. Russell Jackson, who for 33 years was vicar of Moulton, and for 22 years chairman of the South Holland Quarter Sessions and the Spalding Bench of Magistrates. The memorial took the form of a stained-glass window in Moulton church, which had been executed by Messrs. Clayton and Bell, of London, at a cost of £400. The Memorial Committee also expended £150 on the restoration of a Perpendicular screen in the church. This restoration has been carried out by Mr. W. B. Pooley, of Coggeshall, Essex, whilst the whole of the memorial has been under the superintendence of Mr. W. and C. A. Bassett Smith, architects, London.

At Wellington, a new board school, which has been erected by Messrs. Hackley Bros., from plans by Mr. J. E. Cutlan, in Westfield-road, was opened on Friday afternoon.

NOTICE.

The Editorial, Advertisement, and Publishing Offices of the BUILDING NEWS AND ENGINEERING JOURNAL, &c. at—

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TO CORRESPONDENTS.

[We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.]

It is particularly requested that all drawings and all communications respecting illustrations or literary matter should be addressed to the EDITOR of the BUILDING NEWS, Clement's House, Clement's Inn Passage, Strand, W.C., and not to members of the staff by name. Delay is not unfrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

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“BUILDING NEWS” DESIGNING CLUB.

FIFTH LIST OF SUBJECTS.

E.—A Small High School for Girls in the suburbs of a country town on a level site, with frontage facing S.W. The width of the plot is 100ft., with 200ft. depth. Economy of scheme desirable, and width of front not more than 85ft. The building to set back 15ft., but the porch may, if desired, project 10ft. from the main facade. The style to be Queen Anne or Late Renaissance, in red brick, with stone sparingly used, treated in a plain dignified manner. The building must not look like a Board School. The accommodation to comprise a good entrance and entrance-hall; a lecture or central assembly-hall, 50ft. by 25ft. and 20ft. high, with platform at one end; a principal's room, 15ft. square or of that area, near the entrance, with ante or waiting-room adjoining somewhat less in size; a cloak-room, with lavatory and w.c., to be available for visitors on special occasions, when the assembly-hall is used for prize distributions or concerts, &c., and the conveniences so arranged that they may be used by the principal. There are to be six classrooms, four for twenty pupils and two for twelve pupils each. A teachers' common room 18ft. by 14ft., with lavatory, cloakroom, and w.c. *and such*. Three

music-practice rooms, 10ft. by 10ft. each. The basement to have two entrances, one for tradesmen and one for pupils, quite distinct. Good cloak and boot room accommodation, pupils' lavatory, and four w.c.'s. The housekeeper's rooms to be located at top of the building, with kitchen large enough to be used in connection with tea-service on special occasions, and to have a small service lift communicating with the assembly-hall on the ground floor and basement, from whence goods are sent up to the kitchen. The housekeeper to have one sitting-room and two bedrooms, with one large bedroom for three servants, who will require a separate meal and sitting room. There will be half-basement floor, ground floor, first and second floors, and attics. The assembly-hall may if desired be a one-story building. The classrooms to be 15ft. high from floor to ceiling. The other rooms 11ft. high, and offices less if found desirable. The main staircase to be fireproof, and 4ft. 6in. wide. A heating chamber in the basement for hot-water radiators in classrooms to supplement open fireplaces, and to warm assembly-hall, where no fireplace is required. Front elevation, section, and plan of each floor. Scale 8ft. to the inch. View optional. Cube at 1s., and state total cube and price. The return fronts quite plain, as the building comes between others, and light within site on all sides with this limitation only. Ground floor 3ft. above pavement. Posts and chains in front of paved forecourt. Size of paper 25in. by 18in.

DESIGNS RECEIVED.—“Pat McKinn,” “Sunhal,” “Pierrefranza,” “Robin Hood,” “Willis,” “Bruch,” “Ivanhoe,” and “Cambria.”

Correspondence.

THE HIGH ALTAR SCREEN AT
ST. ALBAN'S ABBEY.

To the Editor of the BUILDING NEWS.

SIR,—Mr. John A. Randolph's reference to his “notes upon which” he based his remarks on the above is passingly curious. As a matter of fact, in his new book, entitled “Abbeys Around London,” towards the end occurs the story of St. Alban's Abbey. We call it an abbey for the sake of “auld lang syne” I suppose; but it is, of course, at present, and long has been, a cathedral, with a bishop and a dean in its own right, although the author in question quite overlooks that point. The interesting account of this particular building, occurring as it does amongst that of the twenty-three abbeys said to be clustered around London, is headed as “reprinted, by permission, from the *Lamp*.” If, therefore, Mr. Randolph was not the actual author of the original article in the latter publication—the very odd and really careless blunder of fathering in a new volume the renovation of the High Altar Screen upon the late Sir G. Gilbert Scott, R.A., is not actually his own. He has, under these circumstances, simply given an extract from an unreliable source. But Mr. Randolph may rest assured he is mistaken in his assumption, as stated in to-day's issue, that he believes he has seen a reference in any published book or journal to the late Sir Gilbert's association, in any way, with this particular screen. I speak with some authority on the point, for I have not only a unique collection of over 600 different illustrations of the Abbey (exterior and interior views) in my library, but, upon its shelves, am also the happy possessor of a copy of nearly every existing book, ancient and modern, treating upon England's greatest and premier Abbey.

If Mr. Randolph is, as one concludes him to be (?), a regular and diligent reader of the BUILDING NEWS, his assertion relative to the name of Scott suggests he is probably mixing up in his head the beautiful design made by Mr. John Oldrid Scott, M.A., for a proposed choir screen and stalls to the memory of the late Archdeacon Midway, of St. Alban's. These were all to have been placed at the west end of the choir; but only the actual screen and a few of the stalls have ever been carried out. Mr. Scott's clever design, however, was illustrated in this journal upon December 10, 1880. Further, nearly a year earlier (January 16, 1880) another design for the same memorial was published in the BUILDING NEWS; it was from the pencil of Mr. Scott's late and most accomplished brother, Mr. George Gilbert Scott, F.S.A. This never came to anything, any more than did the design for a reredos for the Lady chapel, designed by Mr. J. O. Scott, and illustrated in this journal on December 10, 1880. This reredos was to have been the united gift of the Freemasons of all England. But, one supposes, in that, as in other cases, “too many cooks spoiled the broth,” and the scheme, like so many others, fell through.

Reviewing what has been done during the past century, we find the High Altar Screen was restored in a very mechanical sort of fashion in 1832 by an architect named Cottingham, and was

not touched again until A.D. 1888, when Lord Aldenham then Mr. Henry Hicks Gibbs, and soon afterwards M.P. for the City of London, placed the oversight of the delicate work of general renovation into the able hands of the late Sir Arthur W. Blomfield, A.R.A. No one else ever had anything to do with the matter professionally. It is true, after the work in question had been in hand several years, the late Mr. J. D. Sedding, with much questionable taste, unsolicited wrote a long and exhaustive report upon Sir Arthur's scheme, and sent it to Lord Aldenham (then Mr. H. H. Gibbs, M.P.). It was a regrettable action, and at the time grieved and hurt very much one of the ablest and kindest hearts in the profession. Further, this was not the only instance in which the late Mr. Sedding allowed his own unbounded enthusiasm to exceed good taste and discretion, and tempt him to poach upon the private preserves of architects older and with greater experience than his own. However, they have all gone now. Peace be to their ashes!

It is unfortunate that so little is really known of the rearing of the actual screen. No sort of contemporary drawing exists: hence we know hardly more about it than we do of the first Christian Cathedral Church of St. Paul's, built towards the beginning of the 7th century, in the days when Melitus, the bosom friend of St. Augustine, was Bishop of London, but of which building not even the roughest sketch remains. Only the base of one of the original large statues and the lower half of one of the smaller ones are now existing, out of nearly one hundred figures that once occupied the niches of this world-wide famous screen. Both the remaining fragments are like the screen's whole fabric—of Clunch stone—a white, almost chalk-like material, still quarried at Totternhoe, near Dunstable. All the figures, if we are to judge by what little has survived Puritanic fury, were most elaborately decorated, both by colour and with gold. The larger statue seems to have represented St. Erasmus, a portion of that name still remaining upon its base. What connection or affinity this early fourth-century bishop had with the abbey is not apparent, save, perhaps, as to the manner of his martyrdom? He died in the same horrid way that some sculpture still preserved at St. Alban's records St. Amphibalus met a martyr's death in the same year. The latter gentleman, it will be remembered, was the British priest who, as a fugitive, is said to have been the actual converter of England's proto-martyr—St. Alban. The old carving in question shows Amphibalus bound to a tree by his own bowels, his stomach having been slit for that purpose, and in that awful position scourged to death. Erasmus's death came about precisely in the same manner, but in Italy, according to tradition exactly twenty-one days previously—i.e., on June 2, A.D. 303. Ancient representations of the unfortunate Erasmus are by no means uncommon in this country. There is an old fragment of marble sculpture in Norwich Museum, showing the cruel persecutors in the act of winding his intestines around a windlass, and upon the ancient font at Buckenham (Norfolk), as well as on an ancient window at Sandringham Church, he is represented with a windlass in hand. At St. Michael's at Plea, Norwich, a mediæval artist shows him with a windlass at his feet, his bowels bound around it; and upon the rood screen at Hempstead we find him bearing the windlass, with his bowels in the same dreadful position. The name on the lesser fragment seems to spell Stephen, who was, of course, the first Christian martyr. Certainly it wears the dalmatic, which, as we know, has been for long centuries the proper vestment of all deacons.

Continuing one's remarks upon authors' careless oversights and mistakes, an instance can be cited in Mr. James Neale's, F.S.A., otherwise most exhaustive work, "The Abbey Church of St. Alban, Hertfordshire" (1877). Therein, the accomplished writer and draughtsman "skips" the high altar screen entirely. Possibly he thought it far too big a job to tackle! Although the Winchester and St. Alban's High Altar Screens are so much alike in general conception and grouping, and we have no actual proof as to which is the earlier of the two, there can be no possible doubt as to which of them possesses the greatest merit in regard to original detail. In this respect, Winchester is not a patch upon St. Alban's. The former is admittedly grand as a mass; but upon looking closely into it, the old detail is but as are a regiment of militia in comparison to His Majesty's Life Guards when pitted

against the detail of St. Alban's. Winchester's screen is built of French stone (Caen), St. Alban's as already stated, of English (Clunch), an infinitely finer and better material. The crockets upon the former are all very much alike, and when half a dozen have been carefully examined, then, practically the student has seen nearly all. How different at St. Alban's? There one positively revels upon the continuous variety of design, exquisitely diversified at every hand. The carved detail upon no two canopies is alike, and every where is to be seen the most perfect early 15th century detail in existence. The St. Alban's screen is, indeed, as superior to any other I know for its period, as the 14th-century work upon the sedilia in the Sanctuary in Exon's cathedral church of St. Peter is to that (about the same date) upon the Percy Shrine at Beverley Minster. My dear old friend, the late John Chapple, J.P., Mayor of St. Alban's, and for so many years the valued and trusty clerk of works to its Abbey, always declared it was his conviction that the High Altar there was the earliest example by some thirty years of internal Early Perpendicular art in the kingdom.

One more instance of a comparatively recent mistake in connection with this priceless old screen, and I have done. In Ashdown and Kitton's fine volume, "St. Alban's: Historical and Picturesque" (A.D. 1893), we read that the recess in the high altar screen immediately above the altar will presently contain a representation of our Lord's descent from the Cross, carved in wood and decorated with gilding and paint. As a matter of real fact, the panel in question is white marble, and the subject is the Resurrection!

Whenever we read ancient, yea, and much modern, history, surely unconsciously we all too often take into the bargain a large dose of fiction!—I am, &c.,
HARRY HEMS.
Fair Park Exeter, January 25.

CHIPS.

An inquiry was held at the town-hall, Weston-super-Mare, on Friday, by Ch. Coker, M.L.C.E., an inspector of the Local Government Board, respecting an application by the urban district council for sanction to borrow the sum of £2,390 for the construction of a new street across glebe lands, and for the purchase of a portion of such land for the formation of the street and the extension of Grove Park.

Dr. H. Lloyd Snape, Professor of Chemistry at Aberystwith University College, has been appointed director of technical and secondary education to the technical instruction committee of the Lancashire County Council, in the place of the late Mr. J. A. Bennion. The salary is £600 a year.

Bishop Barry consecrated, on Saturday, Portman Chapel, Baker-street, and it will be known in future as St. Paul's Church, Portman-square. For the past 120 years the building has been a proprietary chapel, and it has now been acquired, together with the ground on which it stands, by purchase from Viscount Portman for the sum of £8,000, of which he has returned £3,000 towards the endowment fund.

Major J. H. Pringle, of the Board of Trade Department, has this week formally inspected the permanent ways of tramways Nos. 10 and 11, authorised by the Leeds Corporation Act, 1897, comprising the routes along Meadow-road, Beeston-road, Beeston Hill, Town-street, Beeston, and also Elland-road.

The scholars of St. John's Hospital School, Exeter, accompanied by the headmaster, Mr. R. Smith, visited the studios and workshops of Messrs. Harry Hems and Sons, in that city, on Friday afternoon.

A public meeting was held at Cornwood, Devon, on Friday, the Rev. Munday in the chair, with reference to perpetuating the memory of the late Lord and Lady Blachford, of Blachford, Cornwood. Various plans and schemes having been discussed at previous meetings, it was at last decided to erect a cross in the village. Mr. Hine's design was adopted from among those submitted. The work is to be in granite, which abounds on the estate.

At the half-yearly meeting of the Great Eastern Railway Company on Tuesday, the chairman stated that in consequence of the enormous cost of acquiring land for the further widening of the main line from Liverpool-street to three yards, the board has decided to abandon the high-level line and to construct a low-level tube line, starting from Ilford, and running under the existing road to Liverpool-street, where, instead of forming an underground terminus, trains would be enabled, by means of a wide curve, to proceed to Walthamstow. The plans for the scheme had been submitted to Sir B. Baker, who had in a large measure approved them.

Intercommunication.

QUESTIONS.

[11691].—**Working-Class Dwellings.**—Will an experienced reader inform me if there are any rules as to size of rooms, height of same, width of staircase required by any Act for building these dwellings, and if so, what they are? Comparing the dimensions of several sets of rooms in block tenements, I have failed to discover any particular rules.—Q. E. D.

REPLIES.

[11670].—**Books.**—"W." had better get Rivington's "Notes on Building Construction," the part for Honours. Mitchell's "Building Construction," Honours Course, treats of ventilation, hot-water supply, sanitation, &c., and would answer "W.'s" purpose.—G.

[11672].—**Right of Light.**—If the neighbour can have been proved to have abandoned his right of light through the old window, any new window he opens can be obstructed. It is obvious, also, that the higher opening is less injurious to the servient owner, who may raise his premises accordingly. The new window—a story higher—has certainly not the right of light the former lower one possessed. If the lower window had not been stopped up it would have been impossible to interfere with the upper light without blocking out the light to the lower window, and, in such a case, the servient owner is powerless.—M. S.

[11675].—**Selenitic Cement, Concrete, &c.**—Selenitic cement is not as strong as Portland cement. Selenitic gauged mortar (1 to 3) breaks with a pulling stress of 63lb. to the square inch, whilst Portland cement mortar gauged in a similar manner will carry over 30 lb., both being tested as briquettes. Any ordinary lime treated with calcium sulphate, as in the selenitic process, will be twice as strong with double the quantity of sand, as if not so treated.—W. E. M.

[11676].—**Selenitic Cement, Concrete, &c.**—Part 3, "Materials" of Longman's "Building Notes," will show you that Portland cement has a stronger tensile strength than selenitic grey lime, selenitic lias lime, selenitic lime, and selenitic Rugby lias, or selenitic Abertawe lias. Page 178 shows tensile and compressive strength to be in favour of Portland. Hence, I expect, the favour it finds.—REGENT'S PARK.

[11677].—**Stone for Window-Sills.**—There are many stones harder than Portland, but they cannot be worked at less cost. "Box Ground Weather-Stone," supplied by the Bath Stone Firm, Ltd., will do as well, at less cost.—W. E. M.

On account of the death of her Majesty the Queen, the ordinary general meeting of the Architectural Association advertised for this (Friday) evening has been postponed to Friday, Feb. 8, at 7.30 p.m., when Mr. D. T. Fyfe will read a paper on "Architecture in Crete and Turkey," illustrated by lantern views.

French-Canadian families, when they go into mourning, are in the habit, the *British Decorator* remarks, of papering their rooms with a slate-coloured design on a background of solid black. Hundreds of rolls of this sombre-hued paper are annually used in Canada.

The eighteenth annual dinner of the Clerk of Works' Association of Great Britain will be held at the King's Hall, Holborn Restaurant, on Monday, February 17. Mr. W. E. Riley, F.R.I.B.A., superintending architect to the London County Council, will preside.

Mr. Gerald Fitzgerald and Colonel Baghey, Light Railway Commissioners, on Wednesday concluded an inquiry at Crewe into an application by the Crewe Town Council for an order to construct light railways within that borough. The London and North-Western Railway Company and the Cheshire County Council opposed the scheme, and Mr. Hopkinson, engineer, Manchester, gave evidence in its favour. It was proposed to borrow £100,000 for the construction of about eight miles of railway. The commissioners reserved their decision.

Application was made on behalf of the London County Council to Mr. Paul Taylor, at the Southwark Police-court on Wednesday, for ejectment orders against the tenants of houses in Eve's-place, High-street, Borough. The buildings are to be pulled down for sanitary reasons, and the occupants received notice to quit last October. Ejectment orders were granted.

Mr. M. K. North, an inspector under the Local Government Board, has held an inquiry into an application of the Chelmsford Rural District Council for sanction to borrow sums amounting to £4,430 for water-supply works for the parishes of Danbury, East Hanningfield, Little Baddow, Rettendon, Runwell, Sandon, and Woodham Ferris.

The Ossett Rural District Council intend to apply to the Local Government Board for sanction to borrow £7,500 for a sewerage and sewage-disposal scheme for the parish of Stanford-le-Hope, after plans prepared by Messrs. Dobbin and Thudichum.

A new church is about to be built at Partridge, near Penrith, from plans by Mr. Charles J. Ferguson, of English-street, Carlisle.

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ILLUSTRATIONS.

"MUSIC"—LIBRARY AT NEWPORT.—ROYAL INFIRMARY, GLASGOW.—TWO HOUSES AT ST. LEONARD'S.—SHRINK OF EDWARD THE SECOND AT GLOUCESTER.—METHODIST CHURCH, LONGPORT.—ARTISANS' DWELLINGS, SOUTHAMPTON.—CONGREGATIONAL SUNDAY SCHOOLS, SHELTON.

Our Illustrations.

"MUSIC": DESIGN FOR CENTRAL PANEL OF AN OVERMANTEL.

MISS MAY L. GREVILLE COOKSEY, of Liverpool, was awarded a bronze medal for this decorative design at the last National Students' Competition at South Kensington. The subject chosen is "Music," and it was shown by a charcoal drawing boldly handled, the composition being contrived in a self-contained and reposeful manner well adapted to panel treatment, while a pleasing effect is secured by the landscape peeps obtained through the arched openings right and left of the central figure.

NEWPORT, ISLE OF WIGHT, PUBLIC LIBRARY, TECHNICAL INSTITUTE, ETC.

THE plans and perspective view illustrate the design, selected by the Isle of Wight County Council in a recent open competition. The buildings consist of three distinct sections—namely, the library, including the curator's house, the County Council offices, and the Technical Institute. The funds for the building and equipment of the former are provided by Sir C. Seely, and for the two latter from two separate accounts under the control of the County Council. This method of payment necessitates a clear division between the several departments, which accordingly have separate entrances, and are to a certain extent isolated from each other;—thus explaining the leading idea of the plan, which is founded generally on one furnished to competitors with the instructions. The site is an excellent one, with ample space all round the buildings, and somewhat elevated above the road. The buildings will be constructed of brick with ornamental features in Bath stone. The interior will be of a plain character, as the funds available do not allow of much architectural display. The architect is Mr. W. V. Gough, of Bridge-street, Bristol.

ROYAL INFIRMARY, GLASGOW.

WE published the plans and perspective views of this design submitted by Mr. Percy Adams, whose description appeared with the drawings on Jan. 18. To-day we print a double-page reproduction of the detail, showing the Queen Victoria Jubilee façade towards Cathedral-square. The main interest of this drawing is due to the careful way in which the details of the heating and ventilation scheme are shown, with the duct below and the exhaust trunk above. There may not be anything exceptionally fresh about this information, but it makes a useful and practical illustration capably worked out, giving particulars not usually found in published details. The sheet will therefore be found of value for reference.

TWO HOUSES, ST. LEONARD'S-ON-SEA.

"Highlands Cottage," St. Leonard's.—This detached residence has recently been built on the Highlands Estate, overlooking the Marina, for Mr. W. Vandeleur Crake, M.A. The work has been carried out in a plain substantial manner. Inter-

nally, some effect has been given to the hall by the construction of a music gallery immediately over the entrance. The ceiling in the dining-room is panelled, and the beams are supported by grotesque carvings, the single chimneypiece being composed of old Jacobean oak work. The erection has been carried out under the direction of Mr. Philip Tree, F.R.I.B.A., architect to the estate. —"Woodgate," St. Leonard's-on-Sea.—This residence has recently been erected for Mr. John Smith, of Sydenham, on a site occupied by two old houses in the Maze Hill. "Woodgate" immediately overlooks the St. Leonard's public gardens, and is planned on the bungalow type, the reception-rooms and entrance hall being *en suite*. The internal finishings are mostly in Oregon pine, stained and flat varnished. Mr. Philip Tree, F.R.I.B.A., of London and St. Leonard's, is the architect.

SHRINE OF EDWARD II., GLOUCESTER CATHEDRAL.

THE most beautiful of the historic tombs in Gloucester choir was erected by Edward III., on the spot whither the remains of his father were conveyed, after the murder in Berkeley Castle, near Gloucester. This "fayre tombe," partly of Purbeck marble, with an alabaster effigy of Edward II. under a graceful canopy, has frequently been restored, but remains, with its lightness and richness, an interesting piece of work, in a massive and simple Norman arch on the north side of the choir.

FREE METHODIST CHURCH AND SUNDAY SCHOOL, LONGPORT, STAFFS.

THIS undertaking consists of a church, designed to seat 250 persons, all on the ground floor; also an assembly-hall for Sunday-school purposes, with a range of four classrooms. To meet the demands of special occasions, it will be possible, by the removal of a collapsible partition, to open the assembly-hall into the church, and in this manner to augment very considerably the accommodation. Conditions of cost prohibiting the free use of stonework, the architects have endeavoured to give to the buildings a natural brick treatment, and with this object in view, they have refrained from imitating a style of architecture adapted to a superior material. On one side of the principal gable is a small brick tower surmounted by a slate spire, the base of which serves as a porch to the church. Messrs. Wood and Hutchings, of Tunstall and Burslem, are the architects, and Messrs. Grant and Sons' tender has been accepted for the work.

ARTISANS' DWELLINGS IN SIMNEL STREET, SOUTHAMPTON.

THE building consists of six shops on the ground floor, the three at the lower end of the building having cellars underneath. The upper floors contain twenty-six self-contained tenements, which open off two common staircases, entered from the yard at the back of the building. Fourteen of these tenements contain living room, large scullery, w.c., and two bedrooms. The remaining twelve tenements have similar living-rooms and sculleries, but only one bedroom. The principal features aimed at in the planning are: (a) Each landing gives access to three tenements, but without any space lost in passages. (b) The tenements are entered from the sculleries, which separate the living-room from the staircase, and w.c. (c) The w.c.'s are isolated from the living-rooms, and the ventilating pipes are taken into octagonal turrets. Each of these turrets contains six ventilating and air-pipes. The amount sanctioned by the Local Government Board for this building was £9,000. The contract sum was £8,937. The actual cost, including making-up and paving yard (which was not included in the contract), was £8,796 15s. 9d. The balance, £190 4s. 3d., will be spent on fitting up four of the shops, which are at present unlet. The building was opened in May last. Twenty-four tenements and two shops are at present in occupation. The rents charged are £30 per annum for the shops, £10 for cellars, and the tenements vary from 8s. 6d. to 4s. 6d. per week, averaging 2s. 3d. per week for each room, not counting sculleries.

CONGREGATIONAL CHURCH AND SUNDAY SCHOOL, SHELTON.

THESE buildings are to be erected on a particularly open site, situate on the south side of Hanley Park, from which an unobstructed view of the church will be obtained. The whole scheme embraces a church, minister's and deacons' vestries, with lavatory and w.c., an assembly-

hall, and surrounding classrooms. The basement contains, besides the heating-chamber, a spacious, well-lighted kitchen, connected with the hall above by means of a lift. It is the intention of the committee to defer the building of the church for the present, but to proceed with the rest of the scheme, and to utilise the assembly-hall for divine worship until the completion of the undertaking becomes practicable. The wall are to be constructed of local red pressed bricks, with a sparing use of stone, and the roofs will be covered with tiles manufactured in the neighbourhood. Messrs. Wood and Hutchings, of Tunstall and Burslem, are the architects, their plans having been adopted in limited competition.

PROFESSIONAL AND TRADE SOCIETIES.

THE SURVEYORS' INSTITUTION.—An ordinary general meeting of this society had been called for Monday last, for the further discussion of Mr. R. E. Middleton's paper on "The Future of the London Water Supply"; but, on taking the chair, the President (Mr. John Shaw) said that the Council of the Institution, at their meeting, had come to the conclusion that they would best give expression to their feelings, and those of the members present or absent, and mark their sense of the grievous loss which they and the Empire at large had sustained in the death of her late Gracious Majesty, by adjourning the business of the evening. The discussion of Mr. Middleton's paper therefore stands adjourned to the evening of Feb. 11.

THE TECHNICAL COLLEGE ARCHITECTURAL CRAFTSMEN'S SOCIETY.—The usual meeting of the society was held on Friday evening, Jan. 25, when Mr. John M. Artmire delivered his paper on "Legal Points for Architects." He divided his subject into two parts—viz., "The Legal Standing of the Architect," and "Legal Points Relative to Buildings," leaving out the two subjects of Building By-Laws and Conditions of Contract, as these had already been discussed by the society. The legal standing of the architect in such matters as "His Position as Agent and Arbitrator," "Ordering Materials on Behalf of his Client," "Certificates," "Ownership of Drawings," &c., were fully gone into, and law cases bearing on each enunciated. Among his other headings were:—"The Liability for Mishaps During Building," "Mutual Gables and Properties," "Drainage and Water Conveyance," "Ancient Lights and Feu Charters." These were explained in a careful and lucid manner.

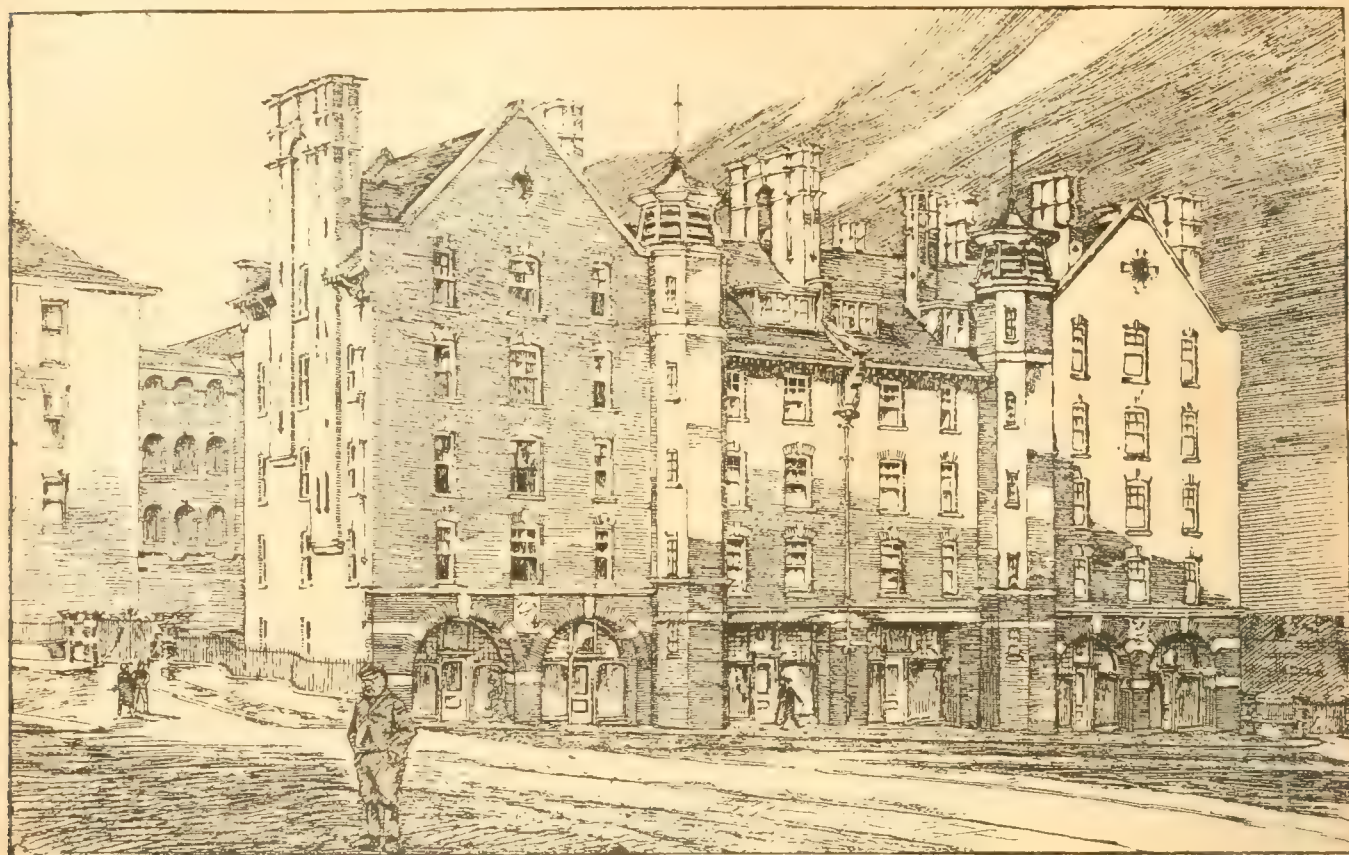
CHIPS.

THE meeting of the Royal Institute of British Architects for the presentation of prizes and studentships announced for Monday, February 4, is postponed till Monday, February 25, at 8 p.m., in consequence of the death of the Queen, Patron of the Royal Institute. The Institute will be closed to-morrow (Saturday) on account of the Royal funeral. At the meeting of February 25, an address of condolence to His Majesty will be moved from the chair.

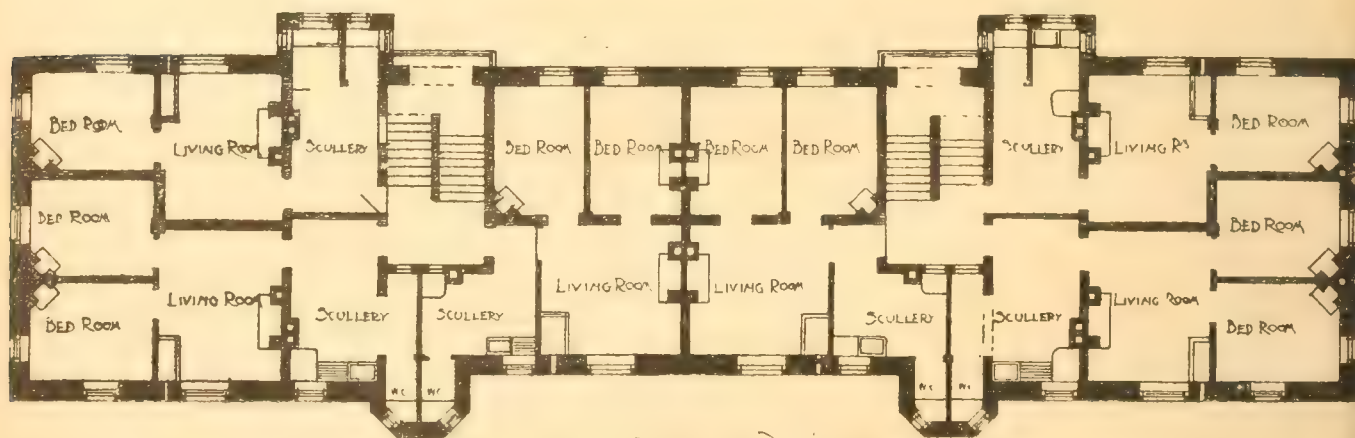
Colonel A. G. Durnford has held an inquiry at Pudsey into the proposal of the town council to put into force the Lands Clauses Act for the purpose of acquiring land for important street improvements, in widening Richardshaw-lane, Town-street, Lowtown, South-parade, New-street, and Parsonage Fold. It was stated that the total cost of the improvements would come to about £20,000.

At Tuesday's meeting of the London County Council it was, after some discussion, agreed to acquire the site of the Caledonian Orphan Asylum at Holloway, subject to the approval of the Charity Commissioners, for £16,500. It is proposed to erect workmen's dwellings on the site, the total capital involved being £83,000. Accommodation will be provided for about 1,400 persons, and it is estimated that no charge will fall upon the rates. The Council also approved of the recommendation of the Improvements Committee that £1,315,000 be expended in connection with the Thames Embankment extension and Westminster improvements at Millbank.

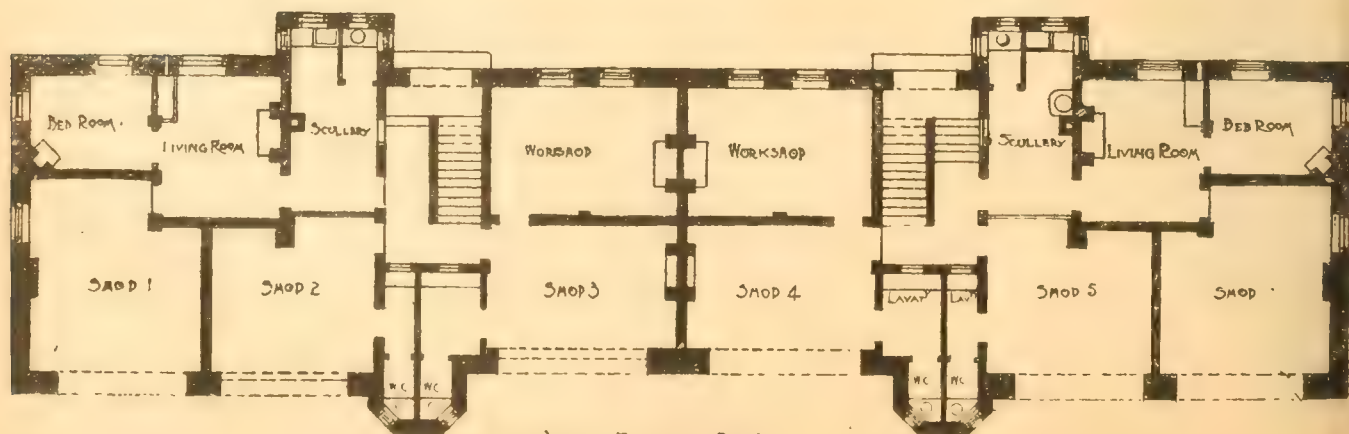
The South Darley Urban District Council have approved and accepted a scheme of water supply prepared by Mr. Harry W. Taylor, A.M.I.C.E., of Newcastle-on-Tyne and Birmingham. The supply will be from springs issuing from the millstone grit measures, from whence it will gravitate to the whole of the district. The estimated cost is about £3,500. Application to the Local Government Board for borrowing powers will be made at once.



ARTISANS' DWELLINGS, SOUTHAMPTON.—CHAS. S. HAIR, Architect.

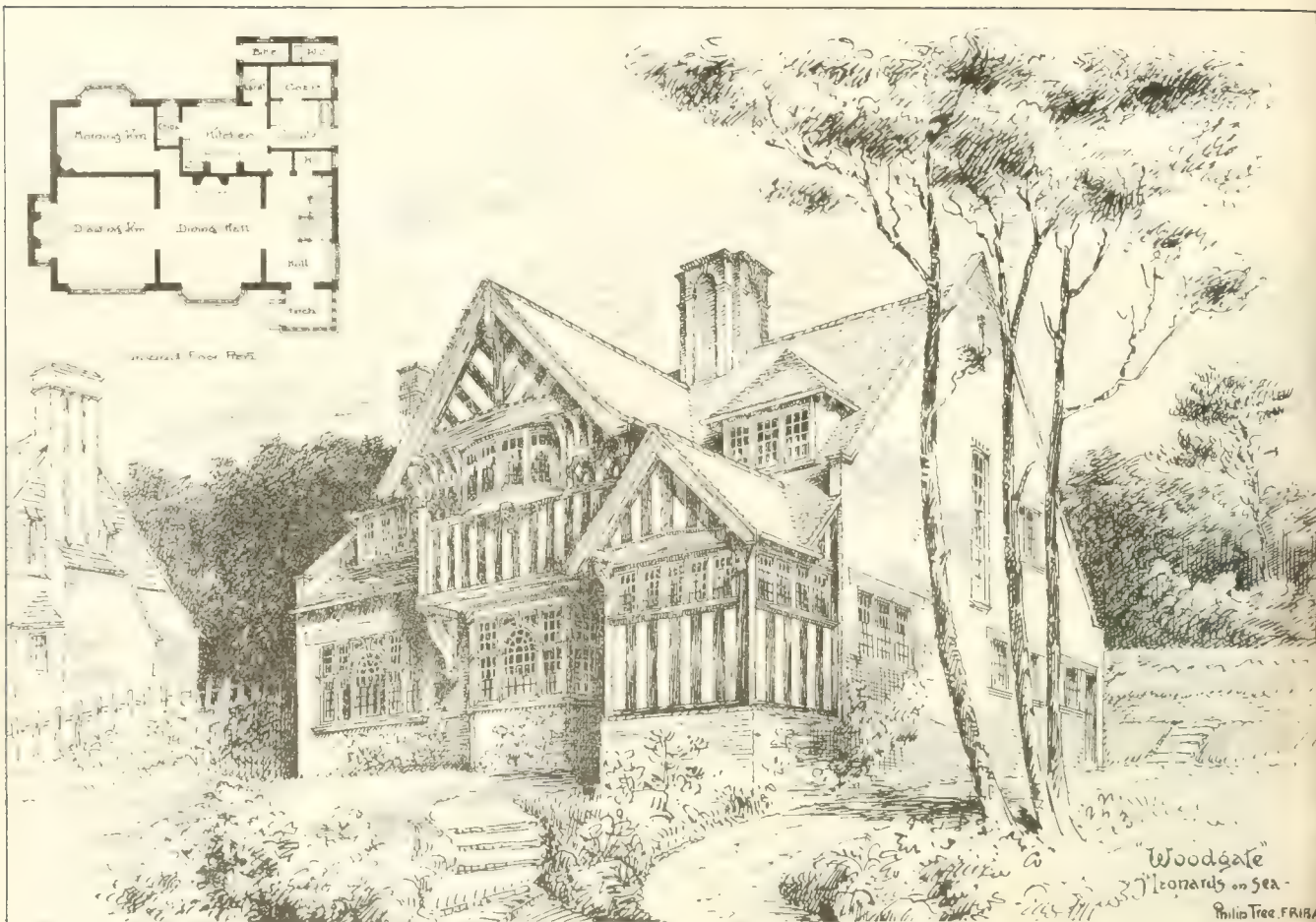


FIRST FLOOR PLAN

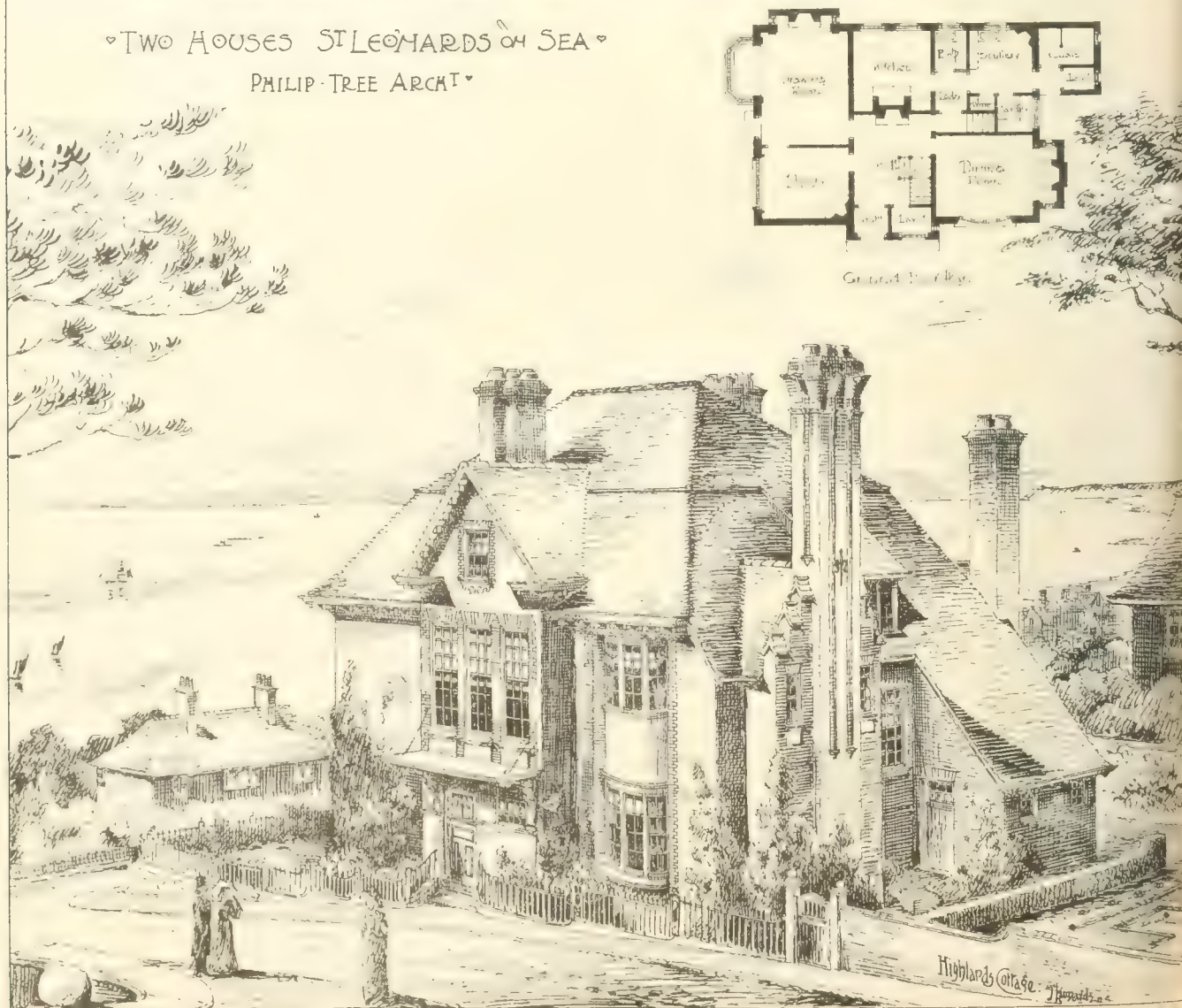


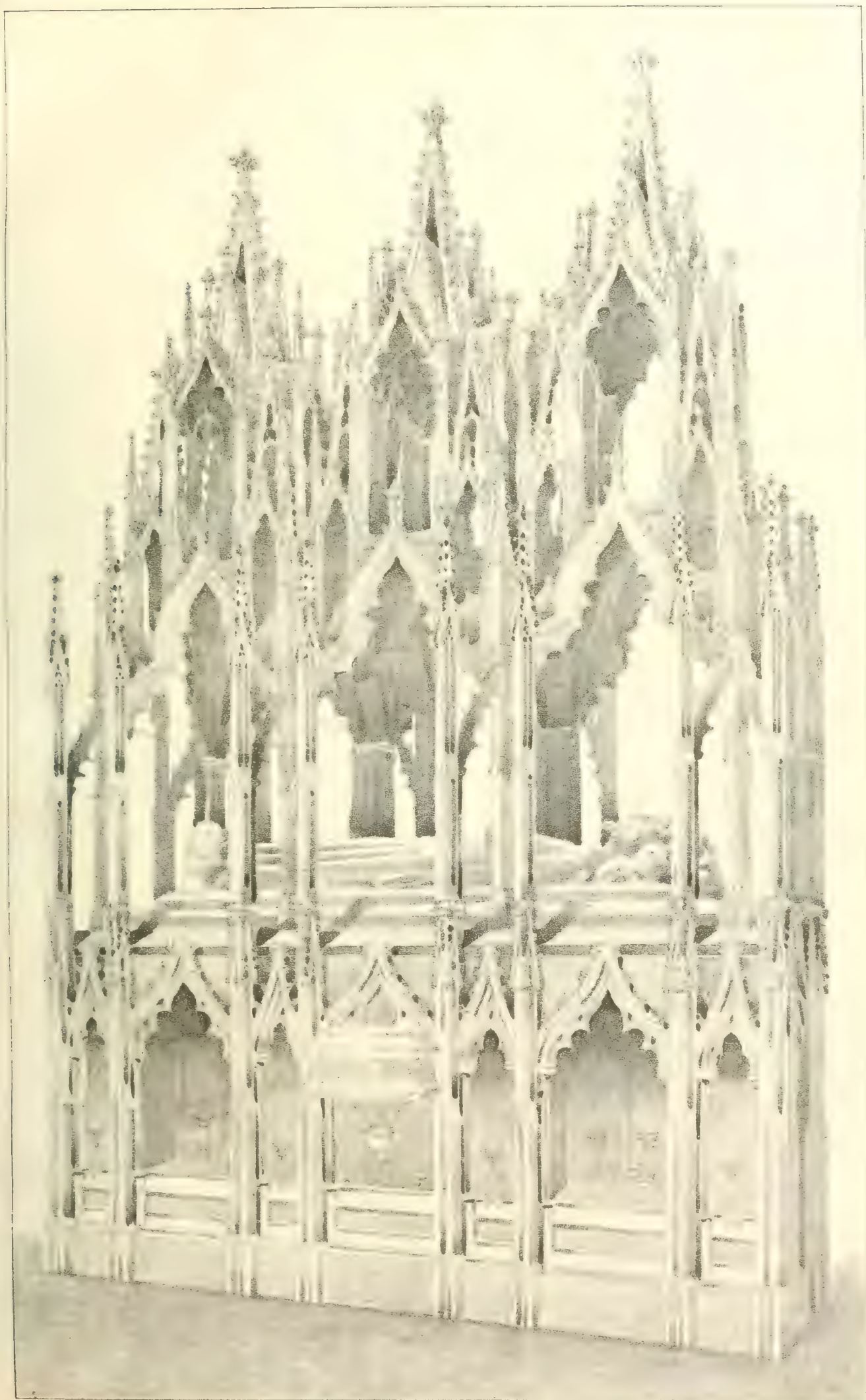
GROUND FLOOR PLAN



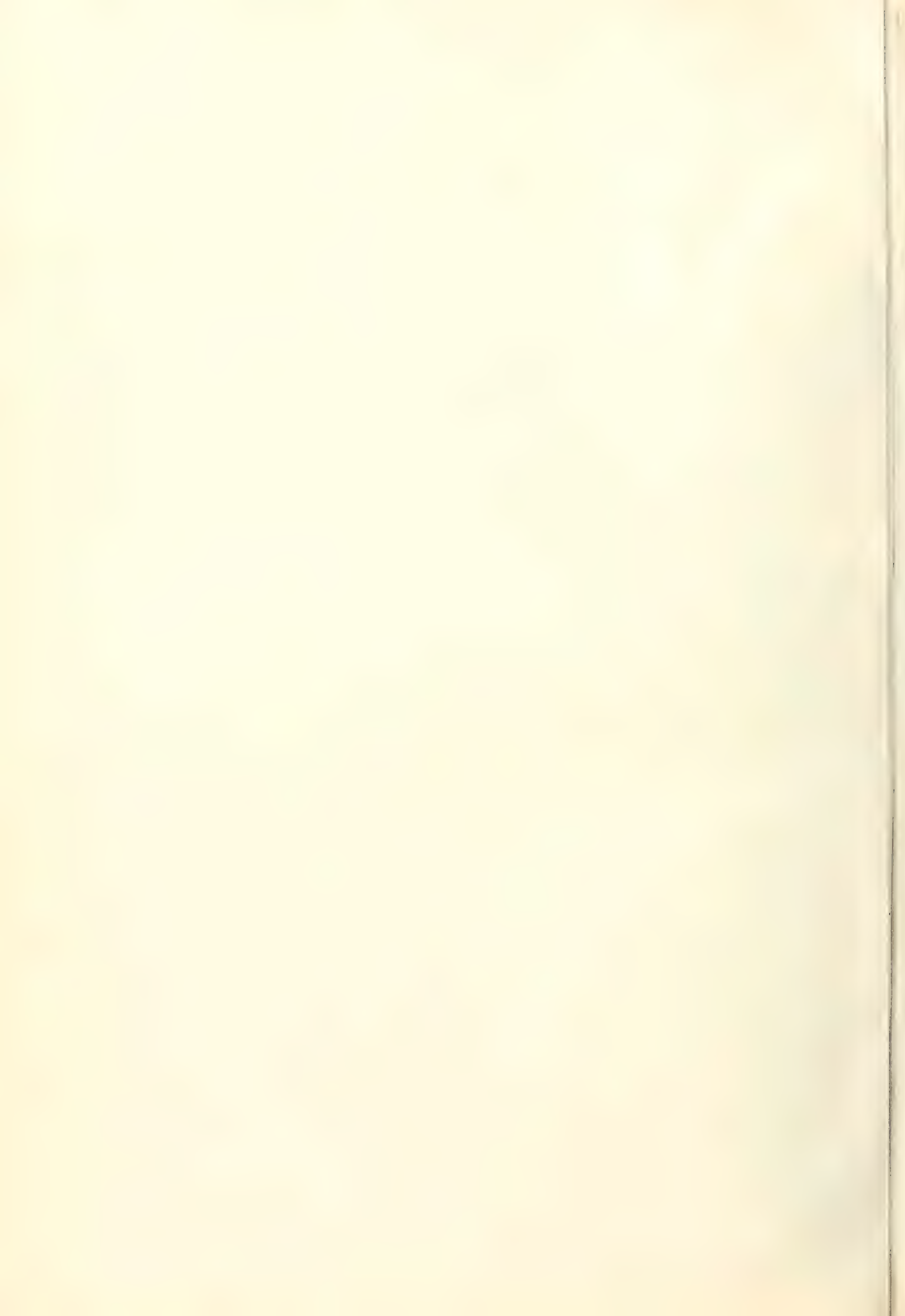


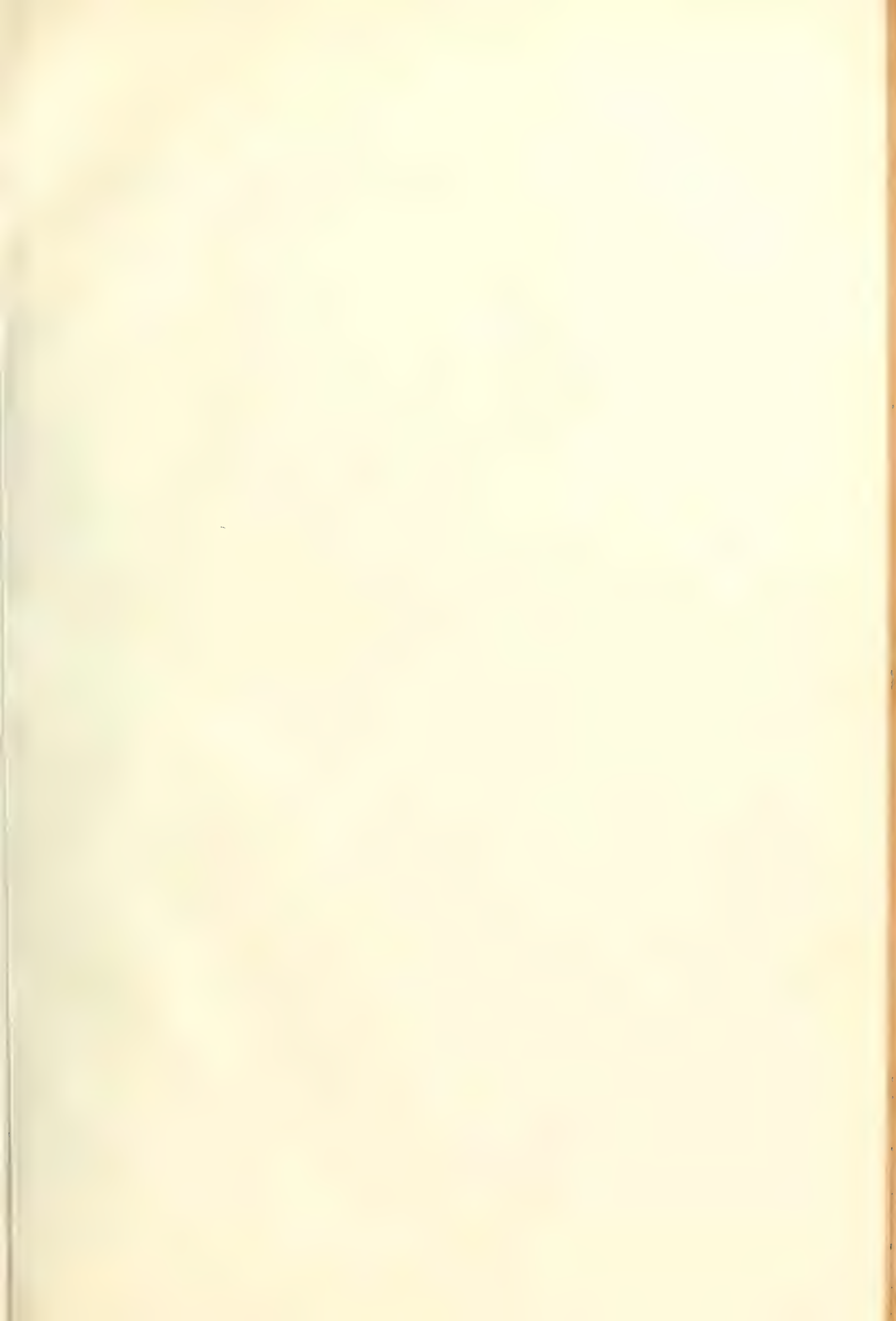
♥ TWO HOUSES ST LEONARDS ON SEA ♥
PHILIP TREE ARCHT ♥





CHOIR OF EDWARD II - GLOUCESTER CATHEDRAL - DRAWN BY JAMES MCILACHLAN.







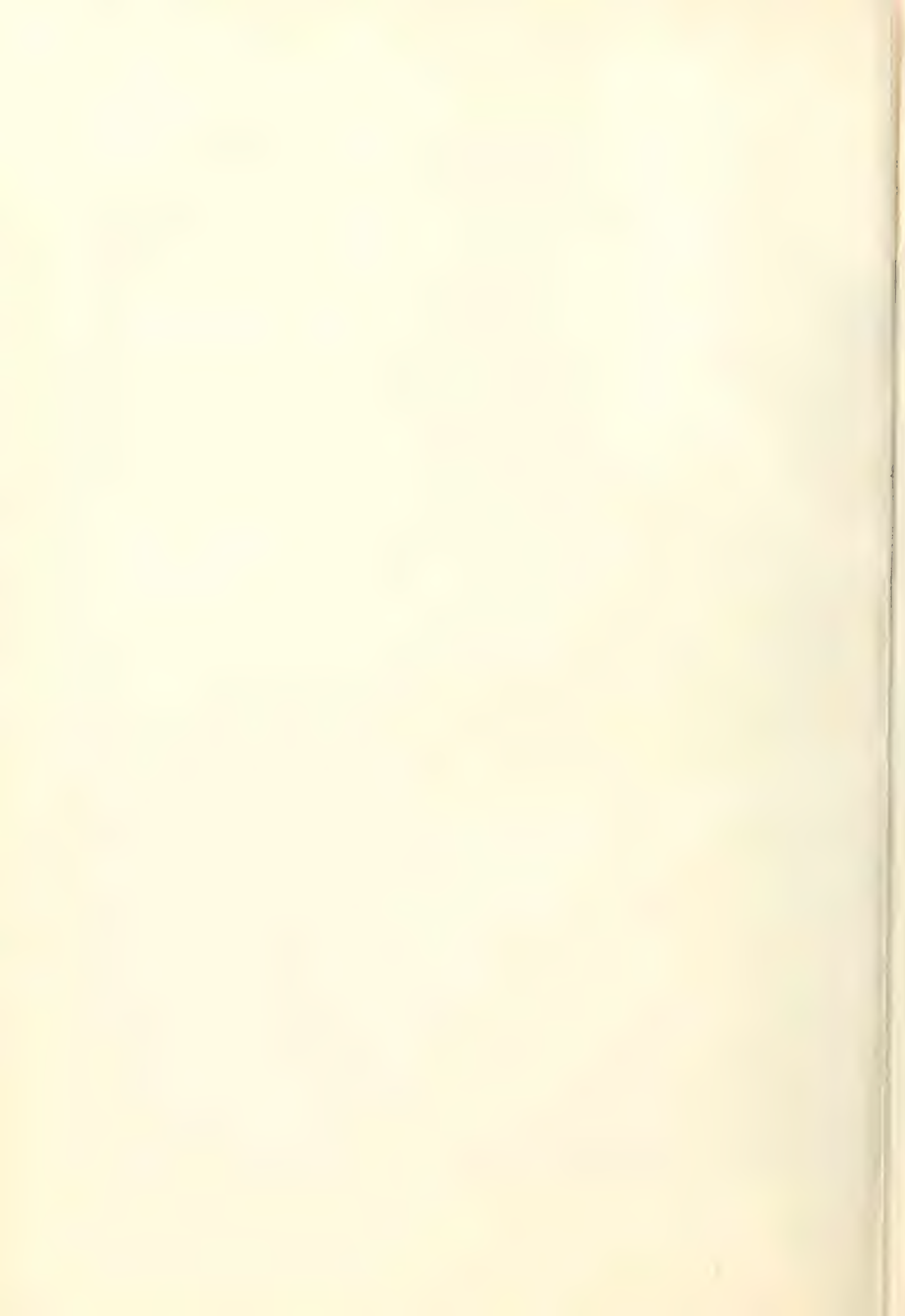
DESIGN FOR THE CENTRE PANEL
NATIONAL BRONZE MEDAL

FEB. 1, 1901.



FRANZ OVERMÄNTEL ♥ MUSIC ♥
TO MAY GREVILLE COCKSEY ♥

PRINTED BY THE "ARTIST" AND "ARTIST" AT THE "ARTIST" SQUARE, LONDON, W.

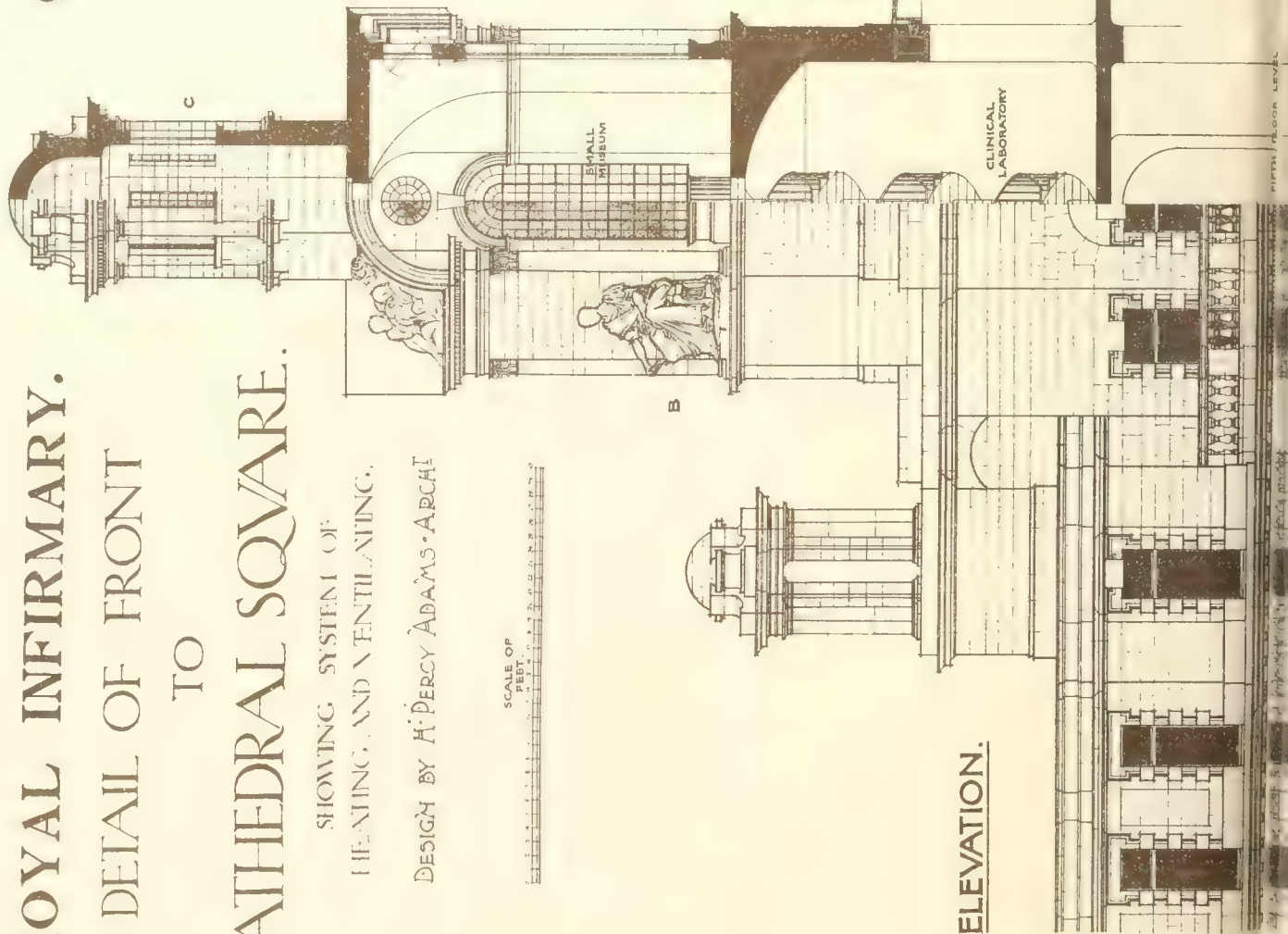




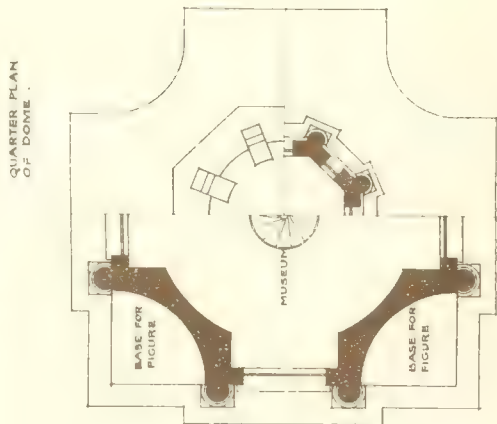
ROYAL INFIRMARY.
DETAIL OF FRONT
TO
CATHEDRAL SQUARE.

SHOWING SYSTEM OF
HEATING AND VENTILATING.

DESIGN BY H. PERCY ADAMS & ARCHT.

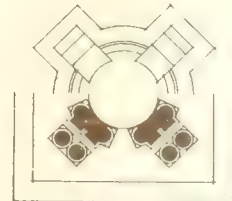


GLASGOW

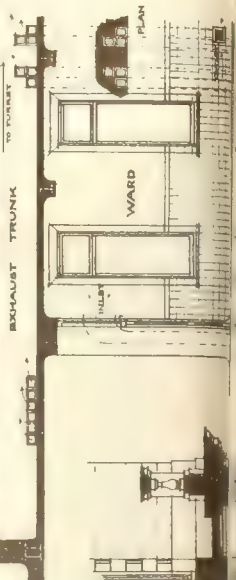


QUARTER PLAN
OF DOME.

HALF PLAN
THRO' B.



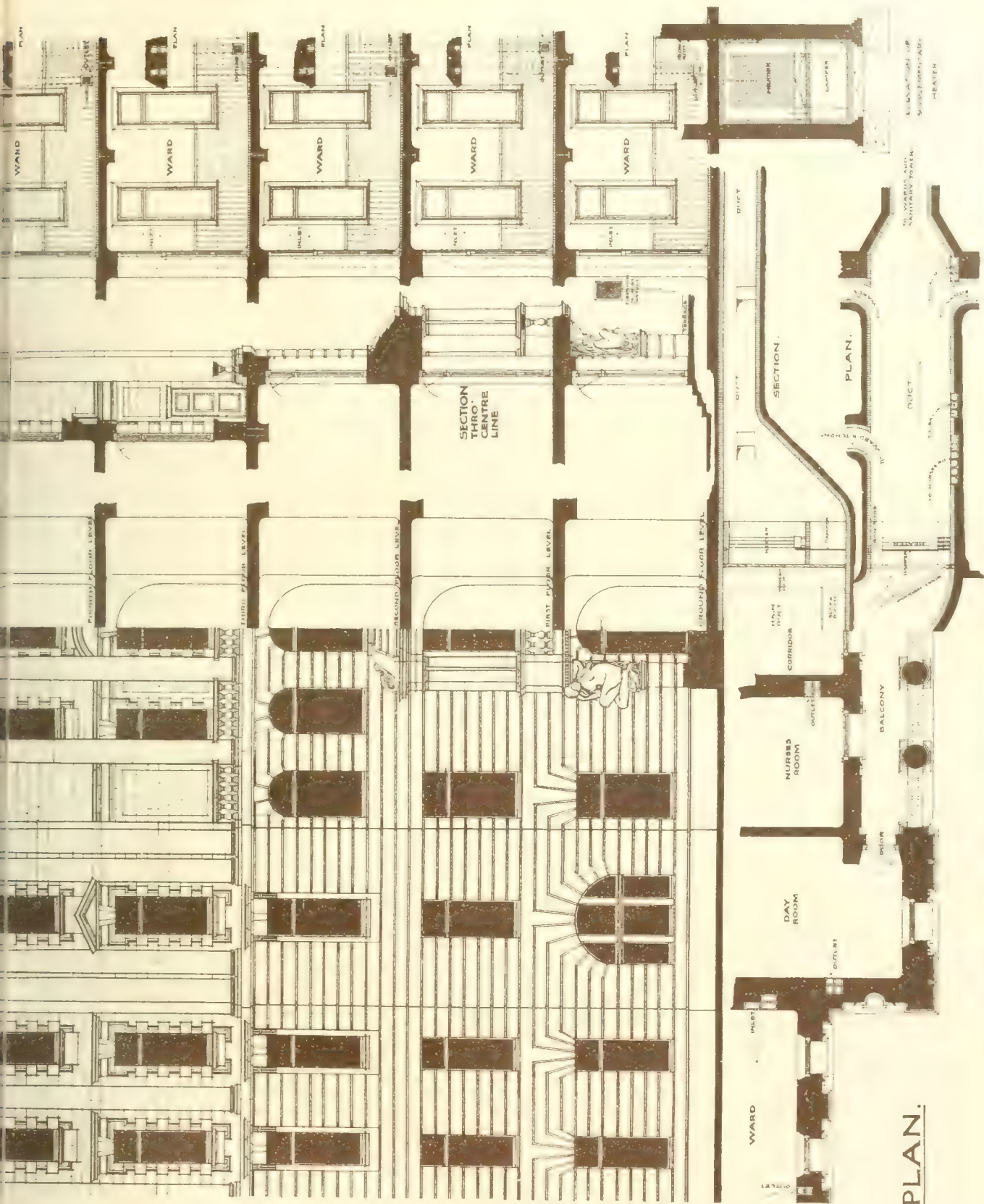
HALF PLAN HALF PLAN
THRO' A. OF DOME

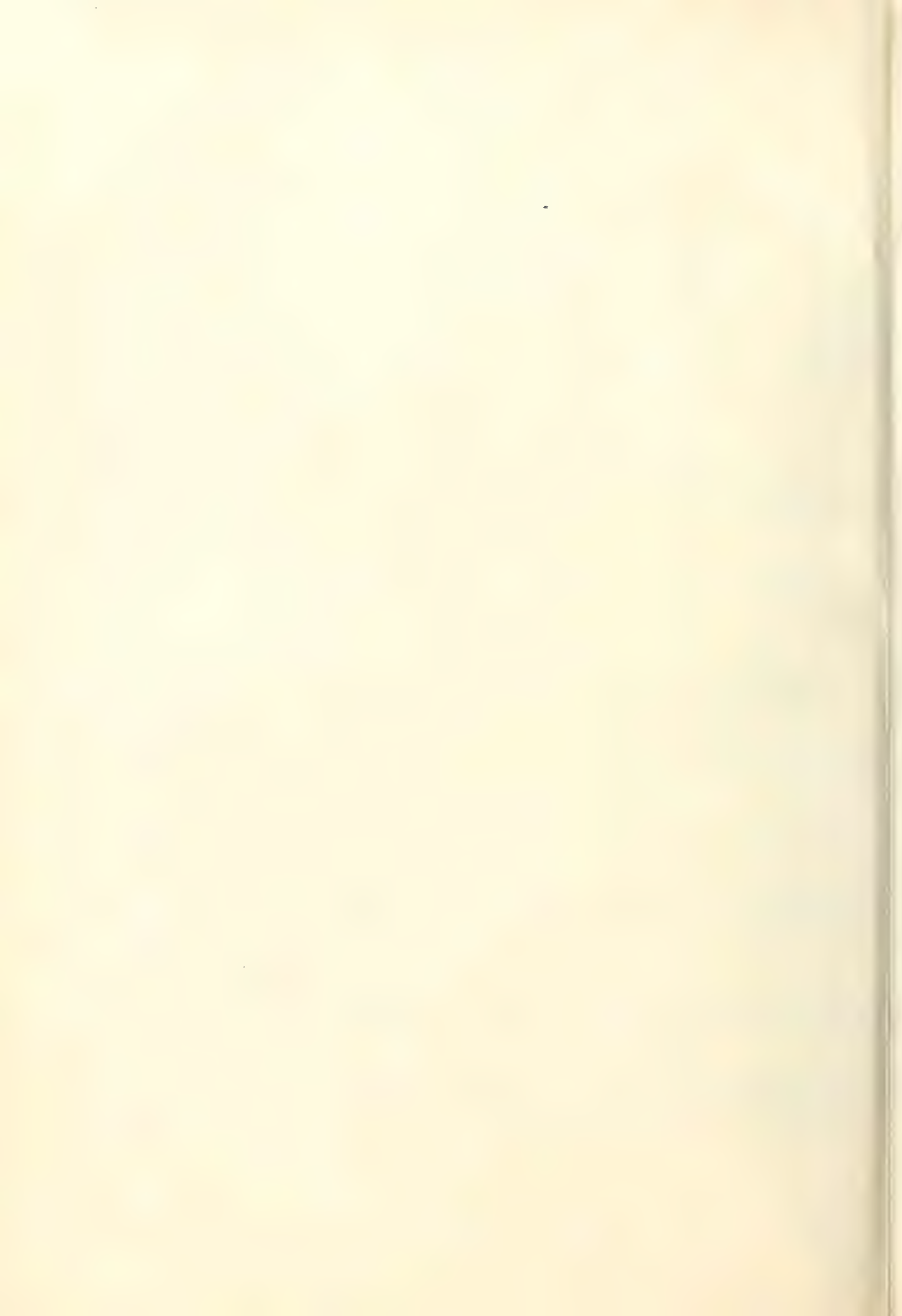


EXHAUST TRUNK

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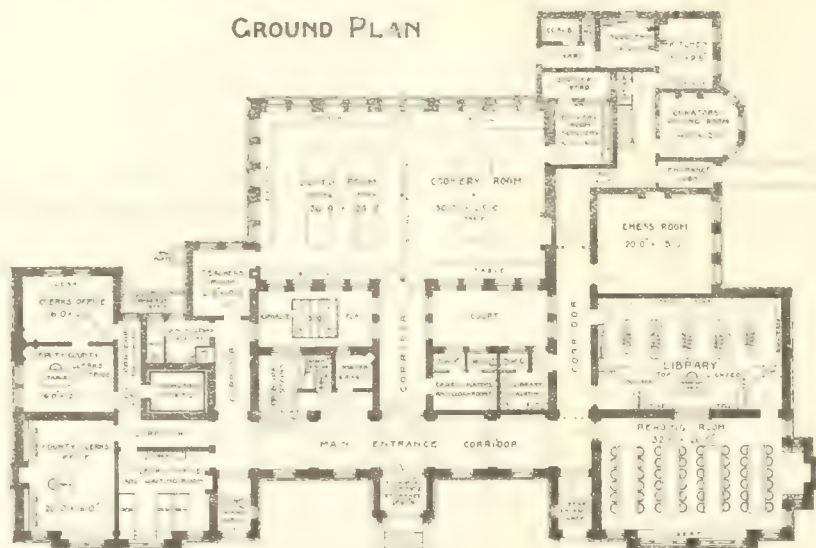
PLAN







GROUND PLAN



LIBRARY-TECHNICAL
• NEWPORT
• ISLE OF WICK

• SELECTED DESIGN • W. V. G.

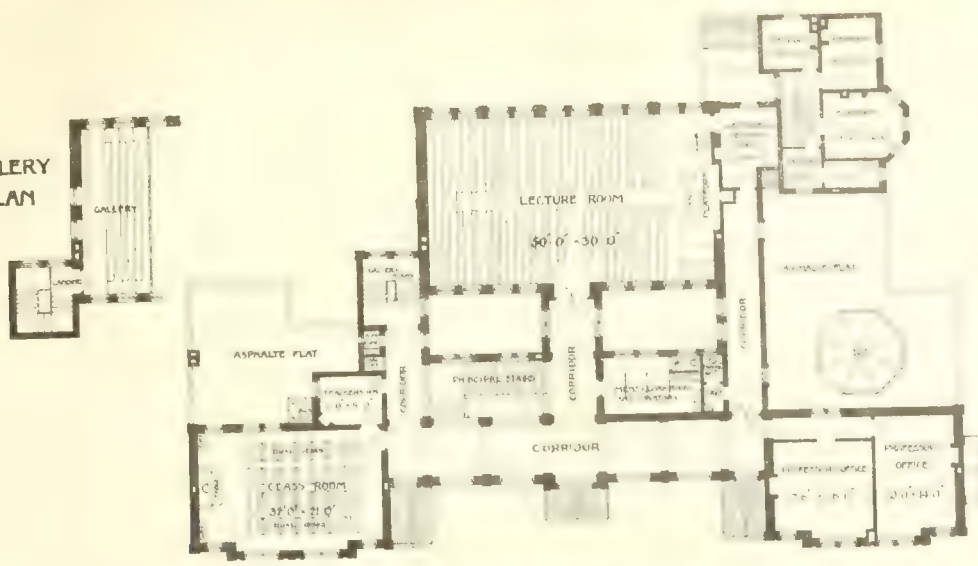
ST. JOHN'S ROAD



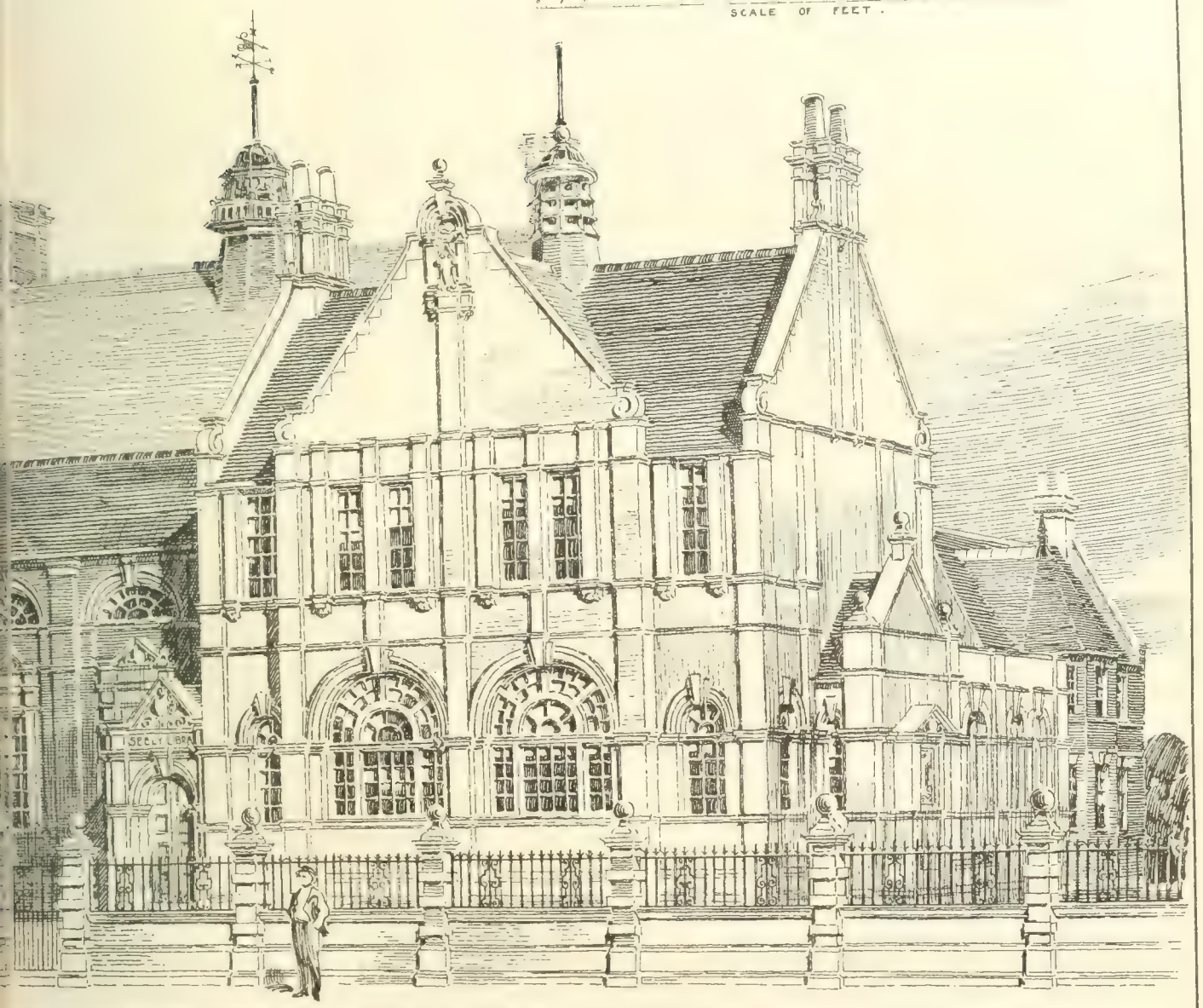
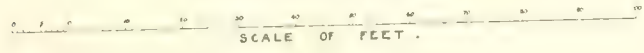
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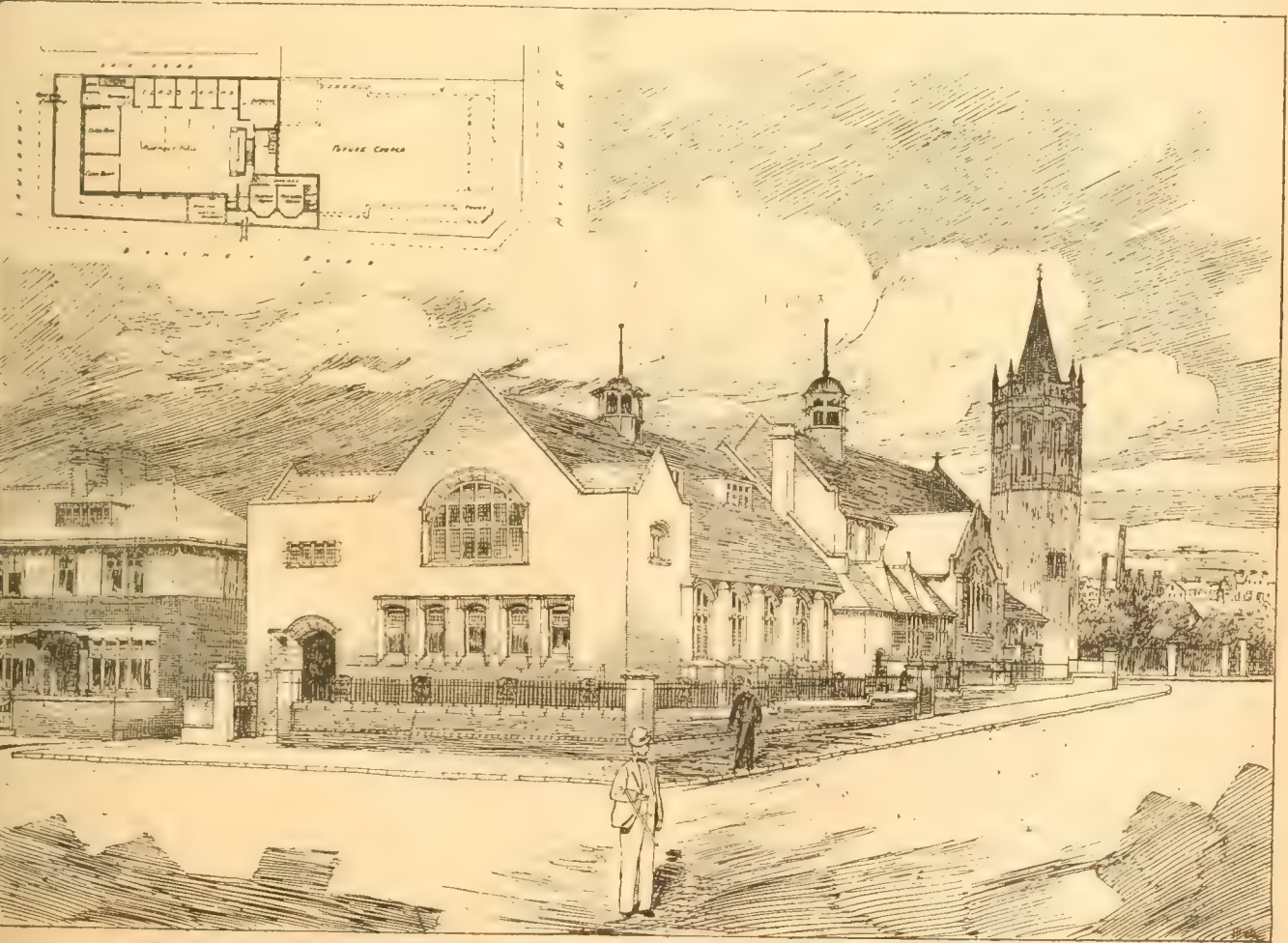
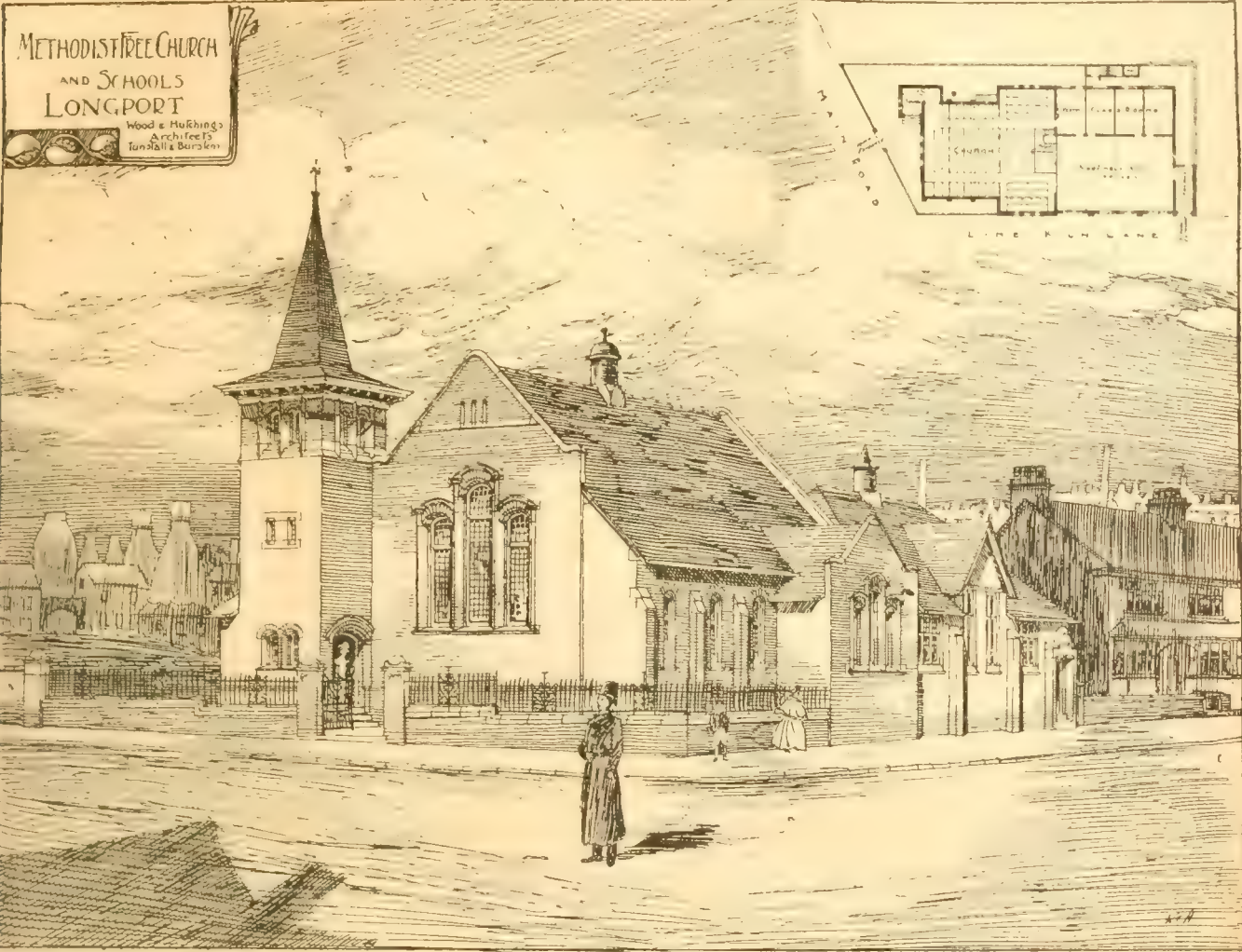
ARCA

GALLERY
PLAN



FIRST FLOOR PLAN





LEGAL INTELLIGENCE.

WHAT IS BLUE LIAS LIME.—BLUE LIAS ASSOCIATION V. CUM PORTLAND CEMENT CO.—At the Westminster Police-court, on Wednesday, Mr. Horace Smith heard this case, in which the plaintiff company sought to obtain an injunction against the defendant company to prevent the latter from terming their output "blue lias lime." Mr. Wills, barrister, appeared for the plaintiffs, and Mr. Horace Ivory, K.C., for the defendants. Alfred Samuel Andrews, manager to the Formby Portland Cement Co., Grosvenor Wharf, Peckham, wrote to the defendants for quotations for "blue lias lime." They replied quoting 18s. per ton, and he ordered four tons of "blue lias," which was supplied, and which was not blue lias lime. William Whitaker, B.A., F.R.S., F.G.S., for nearly forty years engaged on the Geological Survey of England, said he superintended the survey of the large areas of chalk in this country, including Cambridgeshire and Herts. The Lias beds were easily identified as an impure limestone, containing more or less clay, generally alternating in thin clay. In the processes of manufacturing cement, limestone and clay were used. As shown on the Government geological maps, blue lias ran from Dorsetshire in a north-easterly direction to Yorkshire. Royston was more than thirty miles from the nearest outcrop of the lower lias, the only quality commercially used for cement making. The witness had had forty-five years' experience of geology, and had not till this case was raised heard of blue lias lime from Cambridgeshire, and had never heard of the term "blue lias lime" applied to anything drawn from other rocks. Witness had recently visited the pits belonging to defendants and adjoining pits, and saw that they were driven into the chalk marl locally termed "clunch." Cross examined: Was not prepared to specify the characteristics of blue lias rock which rendered it suitable for the manufacture of lime, except as to the proper proportions of calcareous and clayey materials to be mixed. Originally hydraulic lime was solely made from blue lias, but the material derived from Cambridgeshire might be termed "hydraulic," but certainly not "blue lias" lime. There was no difficulty in identifying blue lias. Geologists could not, it was true, see below the surface of the land; but there were such things as deep borings for wells, which informed them as to the lie of the strata beneath. Max Clarke, A.R.I.B.A., Member of the Society of Engineers, 4, Queen-square, W.C., was well acquainted with the term blue lias lime, which was a definite one, of well-settled meaning—viz., lime made from lias formation. As a hydraulic lime blue lias was highly esteemed by architects and builders. It was frequently specified. A builder would not be justified in using other limes as "blue lias." Cross-examined: Witness had only met one architect who failed to recognise whether the lime used was blue lias, and that incident had drawn his attention to the matter. The virtue of blue lias was that it was an eminently hydraulic lime. Mr. Alfred Mousley, A.M.I.C.E., chief manager to Henry Lovatt, railway contractor, of Wolverhampton, for the past 24 years, knew that blue lias lime was generally specified, and such a material was not to be obtained from Cambridgeshire. He had heard of other hydraulic limes, and almost all over the country blue lias lime would cost more than others. George Blackstone Blyth, member of the firm of Chas. Nelson and Co., Ltd., who for nearly 50 years had been blue lias burners at Stockton, Warwickshire, said blue lias was hewn in the quarries, burnt in kilns, and then ground. It was not used neat, except around tube railway, but had to be mixed with sand and other substances. Blue lias lime was hydraulic; it took much longer to set than natural cements, and would stand a few degrees of frost and also setting, but other cements crystallised at once. As to price, in London blue lias lime was 2s. per ton more in cost than Cambridgeshire limes. Blue lias lime was a term well understood both among manufacturers and builders, and such a name referred only to material from the lower lias formation. He was a member of the Blue Lias Association, founded about 18 months ago, and in June of last year a letter was written by Messrs Parker, Sharpe, and Co. to defendants warning defendants not to sell their products as blue lias lime, as that would be a contravention of the Merchandise Marks Act. Defendants' manager, Mr. Russell, wrote declining to admit that their lime was not "blue lias." Cross-examined, witness's works were at Stockton, eight miles S.W. of Rugby. Witness had been personally engaged in the trade nearly sixteen years. Until five years ago witness had never heard of Cambridgeshire blue lias lime. In many places hydraulic lime was manufactured which was not derived from the lias formation. The variation was much greater than the slight variations which existed in blue lias. He knew of no other hydraulic lime which would stand the action of frost and any settlement without losing its adhesive qualities so well as blue lias. Michael Henry Lakin, the Cliffe, Warwick, member of the firm of Greaves, Bull, and Lakin, blue lias burners, of Stockton, Wilmoote, and

Harbury, corroborated the last witness. The blue lias manufacturers recently found themselves confronted, during the past two years, with a lime sold as blue lias at lower prices, which had affected trade. Blue lias lime had been used for most of the important engineering works in London, including the Thames Embankment, the Blackwall tunnel, both supplied by witness's firm. Cross-examined: Portland cement was so called, not because it had any connection with Portland, but because its colour matched the colour of Portland stone. The most valuable quality of blue lias lime was its hydraulic property, and its next its slow-setting nature, and consequent freedom from rigidity. Witness could not say if Cambridgeshire lime possessed those qualities or not; he did not know the lime. Roman cement was well known, and was still excellently made in Rome itself; but as an English product was now almost extinct. Re-examined: Portland cement was not a name of origin; but blue lias lime was restricted to lime made of a certain material. At this stage the case was adjourned till Wednesday next at 11.30 a.m.

IN RE JABEZ REYNOLDS.—A receiving order having been made on the 9th inst., on a creditor's petition, against Jabez Reynolds, described as a builder and contractor, West Hampstead-avenue, Finchley-road, N.W., the statutory first meeting was held on Wednesday before Mr. C. A. Pope. The statement of affairs disclosed gross liabilities £45,367 (of which £42,309 was fully secured and £3,057 expected to rank) and no assets. The debtor began business some 30 years ago. Since 1897 he has been engaged in building operations on the Kidderpore estate, West Hampstead. He attributed his insolvency to the loss of an action brought against him in respect of commission on the sale of a house, and to increase in the price of materials and wages. An adjudication of bankruptcy having already been made, the creditors appointed Mr. R. J. Ward, chartered accountant, trustee, with a committee of inspection. It was intimated that at a later stage of the proceedings the debtor might submit a proposal for the payment of a composition.

COMPENSATION FOR DAMAGE CAUSED BY A TUBE RAILWAY.—Mr. J. W. Penfold, architect, sat as arbitrator, on Tuesday, at the Surveyors' Institution, Great George-street, to hear the case of the executors of the late Lord Herschell v. the Central London Railway—a claim against the Tube Company for damages to houses at Lancaster-gate, alleged to have been caused by the railway works. The claimants contended that, since the construction of the railway, there had been some subsidence of the foundations of the house which had affected the whole structure, but the company alleged that the subsidence was due entirely to other causes, and that it was impossible, from an engineering point of view, that the damage could have been caused by the construction of the railway. Evidence in support of the claim was given by Mr. E. R. Robson, F.S.A., F.R.I.B.A.: Mr. H. Curry, architect and surveyor; Mr. John Bott, surveyor and estate agent; Mr. Sidney H. Baker, of Messrs. John Bott and Sons' office; Mr. Frank Chiswell, manager to Messrs. Powell, auctioneers and estate agents; Mr. Head, of Messrs. W. B. Had and Sons, builders, Notting Hill; and Mr. Mark H. Judge, A.R.I.B.A. For the defence, Mr. Arthur Manton, M.Inst.C.E., who had charge of the construction of the railway in dispute was killed, and the case was then adjourned until Friday, February 8.—At the London Sheriff's Court on Wednesday, before Mr. Under-Sheriff Burchell and a jury, the case of "Purvis v. The Central London Railway Company" came on for the assessment of damages. The claim was for £4,200. Mr. Cripps, K.C., and Mr. Ryde appeared for the plaintiff, and Mr. Freeman, K.C., and Mr. H. Smith for the defendant company. The case for the plaintiff, Dr. W. Ludlow Purvis, of 20, Stratford-place, Oxford-street, was that his house, of which he held a perpetual lease from the City Corporation, had been considerably damaged by the construction of the Central London Railway, the ground having subsided, thereby causing cracks to appear in the outer walls. Mr. Maurice B. Adams, F.R.I.B.A., gave evidence in support of Dr. Purvis's claim, and submitted detailed estimates showing necessary work to be done, and spoke to the radical damage sustained by the plaintiff. Mr. J. Douglass Mathews, F.R.I.B.A., gave corroborative evidence, and supported the architect's specifications and figures. Mr. James Green, of Messrs. Weatherall and Green, Mr. Bousfield, of Messrs. Edwin Fox and Bousfield, and Mr. Rogers also gave evidence as to the damage done and disturbances caused to Dr. Purvis. The evidence showed that it would cost £2,294 to carry out necessary repairs, including the underpinning of the house, while £500 was claimed for the depreciated value of the property and £479 for loss by reason of the tenants of the top and bottom floors having to leave while the repairs were executed. Dr. Purvis also claimed £1,000 for inconvenience, damages to his practice as a consulting physician, consequent on his having to take other premises for a time, and for other incidental expenses. Witnesses stated that the work would take nine months to do. For

the defendants, Mr. Douglas Young gave his opinion as to the extent of work necessary, and stated that the necessary work could be done for £574, and that the time occupied would not be more than fourteen weeks. His evidence was supported by Mr. John Clarkson, F.S.I., district surveyor for Poplar, and by Mr. P. E. Pidditch. The defendant company were willing to pay £1,120. In the result, the jury awarded the plaintiff £1,500, and judgment was entered for this amount.

Trade News.

WAGES MOVEMENTS.

COVENTRY.—The unsettled state of the building trade in this city, and the fluctuations to which it has been liable of late, have resulted in a notice being sent by the local Master Builders' Association to the Operative Bricklayers', Carpenters', Plumbers' and Painters', and Labourers' Unions of a reduction in wages and in the length of the working day during the two months preceding and succeeding Christmas. The notice, which is to take effect on April 1 next, states that bricklayers' and carpenters' wages will be reduced from 8½d. to 8d. per hour, those of plumbers from 9d. to 8½d., of painters from 8d. to 7½d., and of labourers from 6d. to 5½d. per hour. In addition, the length of the working day for the month before and the month after Christmas, which is now fixed at ten hours—seven o'clock to five o'clock—is to be cut down by two hours—eight a.m. to four p.m. This action on the part of the master builders is only part of a concentrated action which is being taken throughout the country. In Coventry there had been an upward rise in the wages of the building trade generally during the past fifteen or twenty years. The Bricklayers' Operative Union have refused to accept the reduction, and the carpenters', plumbers', and painters' operatives are still considering the matter.

GLASGOW JOINERS' STRIKE.—The reduction of wages in other large centres where the rate is 1d. and 2d. lower is drawing men to Glasgow, and the masters are daily filling up the shops on their own terms. Owing to the smallpox epidemic a number of wooden structures are being erected at Belvidere Hospital. The work is being done by 70 Union men at the rate, the reduction of which has brought about the present lock-out, of 10d. per hour.

CHIPS.

At the meeting of the St. Paul's Ecclesiological Society held on Wednesday at the Chapter-house, St. Paul's, a paper on "English Sculptured Fonts, with special reference to their Ecclesiastical Symbolism," was read by the Rev. H. Bedford Pim.

Messrs. Stothby, Wilkinson, and Hodge concluded on Wednesday a three days' sale of books and manuscripts, including the library of the late Mr. Thomas Harris, F.R.I.B.A. Good prices were realised.

Colonel A. C. Smith, R.E., an inspector under the Local Government Board, has held an inquiry at the Gillingham Urban District Council Offices, New Brompton, with reference to the application by the council for sanction to borrow £3,400 for works of private street improvement. The scheme was explained by Mr. F. C. Boucher, clerk to the district council, and Mr. C. Candler, surveyor.

At the Board of Trade on Friday, the committee appointed to inquire into the alleged damage caused by vibration in the working of the Central London Railway held their first sitting, and, after taking some evidence, adjourned *sine die*, the chairman intimating that they would depict Mr. Mallock to make experiments as to the actual amount of the vibration.

The Bristol Church Extension Commission received, on Monday, additional promises of £2,000. Thirty-two thousand pounds have been raised towards the £100,000 proposed for building seventeen new churches and half a dozen mission halls in the city.

At Saturday's meeting of the Metropolitan Asylums Board, a letter was read from the Local Government Board approving the plans of the proposed children's convalescent homes at Rustington, and promising to issue an order authorising the expenditure of £20,500 on the work.

At the London Auction Mart last week an increased supply of small brick and mortar investments met with a good demand, excellent prices being realised for a number of North London properties. The week's total of £146,723 included £11,000 and upwards, the proceeds of a successful sale of gas stock and shares.

A memorial tablet is to be erected in Rochester Cathedral to the memory of Mr. John Hopkins, the late organist.

Our Office Table.

THE Worshipful Companies of Carpenters and Joiners are about to revive the taste for, and demonstrate the advantage of, wooden dwelling-houses. An exhibition of works in wood is to be held in June at Carpenters' Hall, London Wall, E.C., and a special feature is being made of wooden and half-timbered houses. Substantial prizes are offered for the best models sent in of labourers' cottages and small dwelling-houses which comply with the conditions of the competition. The models must be on a scale of not less than half an inch to one foot, and the object in view is to show that small timber-built country houses are, in many cases, superior to and cheaper than those made of bricks.

The question of the protection of Stonehenge from further damage was discussed at a recent meeting of the council of the Society of Antiquaries, when a resolution was passed offering to co-operate with the owner of this ancient monument, Sir Edmund Antrobus, for its protection, and suggesting that a scheme might be arranged with that object in view between the society and Sir Edmund. A copy of the resolution has been forwarded to Sir Edmund Antrobus, and his reply will be considered at the next meeting of the society. If the new theories about the shape of the base of the stones and the depth at which they are imbedded in the earth are correct, something will have to be done without much delay if the remaining uprights are to be kept in position. The scheme for preserving the monument which seems to meet with general approval is the one which has been more than once advocated in our columns—viz., that the remaining uprights should be surrounded by a bed of concrete about 3ft. deep and 3ft. wide. This would support the stones for many years to come, and in a very short time after the turf had been relaid there would be no traces left of the restoration. There is no probability that the remains will be purchased at the preposterous price of £100,000, named by the present owner a few years since.

The engineers of the proposed Manchester and Liverpool Electric Express Railway have prepared for Parliament a detailed estimate of the cost of the scheme, as it will be put forward during the ensuing session. The total length of the proposed railway from its commencement on the west side of Deansgate, Manchester, to its termination in Liverpool, near the entrance gateway of the Blue Coat Hospital in School-lane, is 34 miles 3 furlongs 3 chains, which, owing to the route followed, is one furlong shorter than the scheme of last year. The estimated cost of construction is £1,776,821, as compared with £1,748,940, the estimate of last year's scheme. The scheme as now put forward is, from an engineer's point of view, materially different to the rejected scheme. The cost per mile for laying the permanent way, which, last year, was put at £18,000 per mile, is now reduced to £13,500 per mile, and the cost of the stations, which was estimated at £67,600 is now brought down to £30,000. The cost of viaducts, which, under last year's scheme, would have absorbed £175,300, is now put at only £72,868, whilst tunnelling is also reduced from £61,200 to £55,360. The savings effected by these alterations is more than absorbed by public improvements. Thus in the place of 48 bridges over or under public roads estimated to cost £36,200, it is now proposed to provide 108 bridges at a cost of £120,410, whilst accommodation bridges, which were estimated to cost £44,340, will now cost £80,750. Although 30 acres less land will be required for the new scheme, the cost of acquiring will absorb £558,515, as compared with £451,600. The capital required to be raised is £2,100,000, an increase of £100,000 when compared with the rejected scheme.

SIGNOR UGO OJETTI writes complaining of the manner in which the Baptistery of Florence is being restored. The famous Battistero of San Giovanni was covered with precious marbles by Arnolfo di Lapo towards the end of the 13th century. The slight cracks which some of the slabs exhibited constituted no danger to the edifice, as the wall is not built of marble, but merely encased. A year ago the cathedral authorities ordered the Battistero to be cleaned with pumice-stone. "In the green marble slabs placed in position by Arnolfo di Lapo under the eyes of Dante," writes Signor Ojetti, "square

holes were cut to support the beams which these new barbarians had ready for making the scaffolding. Upon the scaffolding planks were laid, while matting was stretched around to hide the work of re-embellishment. With acids, pumice-stone, and irons all the marbles which looked dirty were cleaned and scraped until they presented an appearance of youthful polish. Wherever the slightest crack was visible, the stone, which had seen the dawns and sunsets of six hundred years, was cut away, and for yards and yards the fine old green marble was replaced with a dark marble of a colour like wet slate. The vulgar Ravaccione of a dirty blue colour was substituted for the cold white Alabastrino; the edges were made sharp like razors, and look horribly new. By degrees, as the scaffolding was taken away, the holes made for the cross-beams were filled up with stone of a 'howling' hue, and the interstices were filled up with painted cement. This has been done to six sides of the octagonal temple where all Florentines are baptised, and which for centuries was the cathedral of Florence. The Battistero, the most perfect example of Early Tuscan art, now appears as brilliant as though it were new, and when the scaffolding and the planks are completely removed, the doors by Andrea Pisano and Lorenzo Ghiberti, the statues by Danti, Rustici, and Sansovino, will seem, in comparison, dusty and lurid until someone takes it into his head to brush, wash, scrape, and polish them also." The cathedral authorities have now asked for £600 in order to "clean" in the same way the basis of the Giotto belfry.

MEETINGS FOR THE ENSUING WEEK.

MONDAY.—Society of Arts. "Elementary Art Education," Cantor Lecture No. 4, by J. Liberty Tadd. 8 p.m.
Liverpool Architectural Society. "Old English Architecture: A Retrospect and a Suggestion," by A. S. Flower, M.A., F.S.A.
Leeds and Yorkshire Architectural Society. "Domestic Work," by F. Rowatree. 6.30 p.m.

TUESDAY.—Architectural Association of Ireland. "Secondary Schools," by M. J. Tighe. 8 p.m.

WEDNESDAY.—Society of Arts. "Some Experiences of Motor Bicycles," by Joseph Pennell. 8 p.m.
Northern Architectural Association. "Luxfer Prisms," by Robert A. Wood, B.Sc., of Manchester. 7.30 p.m.

THURSDAY.—Civil and Mechanical Engineers' Society. "The Staines Reservoir Works," by M. Mawson, A.M.I.C.E. 8 p.m.

FRIDAY.—Architectural Association. "Architecture in Crete and Turkey," by D. T. Fyfe. 7.30 p.m.
Glasgow Architectural Craftsmen's Society. "Wall Coverings," by Colin Sinclair, R. W. Horn, and John Arthur. 8 p.m.
Birmingham Architectural Association. "The Architecture of the 20th Century," by Banister F. Fletcher, A.R.I.B.A. 6.45 p.m.

SATURDAY.—Edinburgh Architectural Association. Visit to Royal High School, Canongate Church, and Old Tolbooth.

THE ARCHITECTURAL ASSOCIATION.—Owing to the DEATH of HER MAJESTY the QUEEN, the ORDINARY GENERAL MEETING, fixed for February 1st, has been POSTPONED to FRIDAY, FEBRUARY 2nd, at 7.30 p.m., when Mr. D. T. FYFE will read a Paper on "Architecture in Crete and Turkey."

G. B. CARVILL, Hon. Secs.
R. S. BALFOUR.

The Society of Architects.

Founded 1884. Incorporated 1893.

ST JAMES'S HALL, PICCADILLY, W.

An EXAMINATION for Admission to MEMBERSHIP will be held at the above address, on 2nd, 3rd, and 4th APRIL, 1901. Entries close March 21st. Past Examination Papers are published in the Year Book, price Two Shillings. GOLD, SILVER, and BRONZE MEDALS, and other Awards are given to successful candidates under specified conditions. Syllabus sent free.

C. MCARTHUR BUTLER, Secretary,
Society of Architects.

At Walker-on-Tyne, east of Newcastle, an electric power station is being built at Neptune Bank. Of the three sets of engines being erected at Neptune Bank Station, two have been built by Messrs. Wigham, Richardson and Co., Ltd.; one of these engines is now actually supplying light and motive power in the district, and the other is in course of erection. The third is being erected by the Wallsend Shipway Co., Ltd. The consulting engineer is Mr. Chas. H. Merz, and the resident engineer is Mr. Riseley.

LATEST PRICES.

IRON, &c.

	Per ton.	Per ton.
Rolled-Iron Joists, Belgian	26 0 0 to	26 10 0
Rolled-Steel Joists, English	9 0 0 "	10 0 0
Wrought-Iron Girder Plates	9 0 0 "	9 15 0
Bar Iron, good Staffs	8 7 6 "	9 7 6
Do., Lowmoor, Flat, Round, or Square	20 0 0 "	20 0 0
Do., Welsh	5 15 0 "	5 17 6
Boiler Plates, Iron—		
South Staffs	7 17 6 "	8 5 0
Best Suedshill	13 0 0 "	13 10 0
Anglo 10c., Tees 20c. per ton extra.		
Builders' Hoop Iron, for bonding, &c., £8 15s.		
Builders' Hoop Iron, galvanised, £15 10s. 9d. per ton.		
Galvanised Corrugated Sheet Iron—		

ft. to 8ft. long, inclusive gauge	Per ton.	Per ton.
Best ditto	12 5 0 ..	12 10 0
	12 15 0 ..	13 0 0
Cast-Iron Columns	Per ton.	Per ton.
Cast-Iron Stanchions	29 0 0 to	29 10 0
Rolled-Iron Fencing Wire	9 0 0 "	9 10 0
Rolled-Steel Fencing Wire	11 15 0 "	12 15 0
" Galvanised	11 15 0 "	12 15 0
Cast-Iron Sash Weights	13 0 0 "	14 0 0
Cut Clasp Nails, Sin. to 6in.	8 5 0 "	6 10 0
Cut Floor Brads	12 0 0 "	13 0 0
Wire Nails (Points de Paris) —	11 15 0 "	12 15 0
0 to 7 8 9 10 11 12 13 14 15 16 B.W.G.		
11- 11-6 11-9 12-8 12-9 13-6 14-3 15- 16- per cwt.		

Cast-Iron Socket Pipes—
Sin. diameter £8 17 6 to | £7 5 0 || 4in. to 6in. | 6 15 0 " | 7 0 0 |
| 7in. to 24in. (all sizes) | 6 15 0 " | 7 0 0 |
| Coated with composition, 2s. 6d. per ton extra; turned and bored joints, 6s. per ton extra. | | |

Pig Iron	Per ton.	Per ton.
Cold Blast, Lilleshall	105s. to	110s.
Hot Blast, ditto	57s. 6d. to	62s. 6d.
Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. :—		
Gas-Tubes	60 p.c.	
Water-Tubes	55 "	
Steam-Tubes	50 "	
Galvanised Gas-Tubes	47½ "	
Galvanised Water-Tubes	45 "	
Galvanised Steam-Tubes	41 "	

	Per ton.	Per ton.
Zinc, English (London mill)	£25 0 0 to	£25 13 0
Do., Vieille Montagne	26 0 0 "	26 15 0
Sheet Lead, 8lb. per sq. ft. super.	21 0 0 "	22 0 0
Pig Lead, in 1cwt. pigs	20 0 0 "	21 0 0
Lead Shot, in 28lb. bags	23 0 0 "	24 0 0
Copper Sheets, sheathing and rods	89 0 0 "	90 0 0
Copper, British Cake and Ingot	75 10 0 "	76 0 0
Tin, Straits	12 5 0 "	12½ 15 0
Do., English Ingots	123 10 0 "	124 0 0
Spelter, Silesian	18 17 6 "	19 12 6

TIMBER.

	per load	£10 10 0 to	£16 5 0
Teak, Burmah	£10 10 0 to	£15 5 0	
" Bangkok	10 0 0 "	15 5 0	
Quebec Pine, yellow	4 7 6 "	5 5 0	
" Oak	3 5 0 "	4 15 0	
" Birch	3 0 0 "	6 0 0	
" Elm	5 0 0 "	6 0 0	
" Ash	3 7 6 "	3 15 0	
Danish and Memel Oak	3 5 0 "	4 15 0	
Fir	3 0 0 "	4 0 0	
Wainscot, Riga p. log	1 17 6 "	3 5 0	
Lath, Danish, p.f.	4 0 0 "	5 15 0	
St. Petersburg	4 0 0 "	6 10 0	
Greenheart	7 15 0 "	8 0 0	
Box	7 0 0 "	15 0 0	
Sequoia, U.S.A. per cube foot	0 1 9 "	0 2 0	
Mahogany, Cuba, per super foot			

Lin. thick	0 0 6 "	0 0 8
" Honduras	0 0 6 "	0 0 7½
" Mexican	0 0 4 "	0 0 4½
" African	0 0 3½ "	0 0 5½
Cedar, Cuba	0 0 3 "	0 0 3½
" Honduras	0 0 2½ "	0 0 3½
Satinwood	0 0 10 "	0 1 9
Walnut, Italian	0 0 8 "	0 0 7½
" American (logs)	0 2 3 "	0 4 6
Deals, per St. Petersburg Standard, 120—12ft. by 1½in. by 1½in. :—		

Quebec Pine, 1st	£25 10 0 to	£30 0 0
" 2nd	18 0 0 "	21 0 0
" 3rd	12 10 0 "	14 0 0
Canada Spruce, 1st	11 10 0 "	14 15 0
" 2nd and 3rd	9 10 0 "	10 5 0
New Brunswick	8 10 0 "	10 15 0
Riga	8 10 0 "	10 9 0
St. Petersburg	11 10 0 "	18 0 0
Swedish	11 10 0 "	21 0 0
Finland	11 0 0 "	12 10 0
White Sea	12 10 0 "	22 0 0
Battens, all sorts	5 0 0 "	12 0 0
Flooring Boards, per square of lin. :—		
1st prepared	£0 12 9 "	£0 19 0
2nd ditto	0 11 6 "	0 14 9
Other qualities	0 7 0 "	0 13 6

Staves, per standard M. :—		
U.S. ditto	£37 10 0 "	£45 0 0
Memel, cr. pipe	220 0 0 "	230 0 0
Memel, brack	190 0 0 "	240 0 0

OILS.

Linseed	per tun	£29 0 0 to	£29 10 0
Rapeseed, English pale	80 0 0 "	30 5 0	
Do., brown	28 15 0 "	29 5 0	
Cottonseed, refined	21 10 0 "	22 0 0	
Olive, Spanish	35 0 0 "	38 0 0	
Seal, pale	24 15 0 "	25 0 0	
Cocanut, Cochin	27 15 0 "	28 0 0	
Do., Ceylon	25 15 0 "	26 0 0	
Palm, Lagos	28 0 0 "	28 5 0	
Oleum	17 5 0 "	19 5 0	
Lubricating U.S. per gal.	0 7 0 "	0 8 0	
Petroleum, refined	0 0 6½ "	0 0 6½	
Tar, Stockholm	1 6 0 "	1 6 0	
Do., Archangel	0 19 6 "	1 0 0	
Tarpetine, American ... per tun	37 0 0 "	37 5 0	

LIST OF COMPETITIONS OPEN.

Newtownards, Ireland—Water Supply, &c.	James Colville, Clerk, The Workhouse, Newtownards	Feb. 9
Bristol—Alterations to Petty Sessional Court and Offices	The Clerk, County Council Offices, Bristol	" 19
Ballarat, Victoria—Soldiers' Statue, Bronze or Marble (cost £1,500, £2,000, £2,500)	J. W. Nedwell and W. D. Hill, Hon. Secs., Ballarat, Victoria	" 14
Nottingham—Sewerage Scheme for the Parishes of Colwick-Goding and Burton-Joyce	C. J. Spencer, Clerk, Public Offices, Basford, Nottingham	Mar. 25
Dudley—Six Villas and Six Cottages	G. W. Waring, Mining Engineer, 42, Wellington-street, Dudley	" —

LIST OF TENDERS OPEN.

BUILDINGS.

Waterhouses—Storehouse	Brandon and Byshottles U.D.C.	R. Gardner, Surveyor, Langley Moor, near Durham	Feb. 2
Cardiff—Shops and Offices, Queen-street	Urban District Council	Teather and Wilson, Architects, Queen-street, Cardiff	" 2
Teddington—Foundations, &c., Fire Station	Urban District Council	Marshall Hainsworth, Surveyor, Teddington	" 2
Southport—Babies' Room to Blowich C.E. Infant School	Urban District Council	Henry Jones, Architect, Cambridge-arcade, Southport	" 2
Merthyr Tydfil—Story to Nursing Institute	Cuckfield Rural District Council	C. M. Davies, 112, High-street, Merthyr Tydfil	" 2
Burgess Hill, Sussex—Isolation Hospital	School Board	G. T. Hine, Architect, 35, Parliament-street, Westminster, S.W.	" 4
Stoke-upon-Trent—Schools, Shelton New-road	Public Library Committee	Scriveners and Sons, Architects, Howard-place, Hanley	" 4
Greenock—Committee-Rooms	The Master of Works' Office, Greenock	J. Retallack, Croft Mitchell, Camborne	" 4
Camborne—Nine-Roomed House at Croft Mitchell	Tramways Committee	A. Brown, M.I.C.E., City Engineer, Guildhall, Nottingham	" 4
Nottingham—Car Shed, &c.	War Department	The Royal Engineer Office, Cork Barracks, Ireland	" 4
Ballincollig, Ireland—Canteen, &c.	Guardians	J. Ace Beynon, Architect, Nunsey-road, Frome	" 4
Frome—Separation Wards at Workhouse	Welsh Wesleyan Chapel Trustees	Wm. Griffiths, F.S.I., Architect, Falcon Chambers, Llanelly	" 4
Llanelly—Vestry, &c.	Urban District Council	H. B. Thorp, Architect, Goole	" 4
Pollington-cum-Balne—Classroom	Urban District Council	Charles Jones, M.I.C.E., Surveyor, Public Buildings, Ealing, W.	" 4
South Ealing—Workmen's Cottages (122)	Electric Light Committee	R. M. Gloyne, A.M.I.C.E., Borough Engineer, Town Hall, Eastbourne	" 4
Eastbourne—Electric Lighting Station	Gelli Builders' Society	D. Sims Rees, Mining Engineer, Maesteg	" 4
Maesteg—Cottages (78)	West Auckland Brewery Co.	F. H. Livesay, Architect, 107, Newgate-street, Bishop Auckland	" 4
Darlington—Rebuilding Woolpack Inn	School Board	G. Camplin, Surveyor, 11, Elmer-street, Grantham	" 4
Spillgate, Grantham—Sunday Schools & Caretaker's Cottage	Great Northern (Ireland) Rlwy. Co.	G. Gordon Hoskins, F.R.I.B.A., Court Chambers, Dartington	" 4
Rise Carr, Darlington—Two Schools	Rector and Select Vestry	The Company's Engineer-in-Chief, Amiens-street Terminus, Dublin	" 4
Dundalk—Converting Running Shed into Goods Warehouse	London County Council	The Rectory, Waterville, Ireland	" 4
Waterville—Church Enlargement	Urban District Council	Medley Hall, M.S.A., 29, Northgate, Halifax	" 4
Deptford, S.E.—Levelling Site in Mill-lane (3,900 yards cube)	Gas & Electric Lighting Committee	Nelson F. Dennis, Surveyor, Aldershot	" 4
Halifax—Twelve Houses, Albert Reservoir	Great Northern (Ireland) Rlwy. Co.	Hy, G. Stevenson, Town Clerk, Darlington	" 4
Aldershot—Ward Block, &c., at Sanatorium	Union Guardians	T. Morrison, Secretary, Amiens-street Terminus, Dublin	" 4
Darlington—Coal Bunkers, Electric Light Station	School Board	J. Henry Taylor, M.I.C.E., Borough Surveyor, Barnsley	" 4
Fulton, Ireland—Artisans' Dwellings and Labourers' Cottages	Wesleyan Day Schools Trustees	Joseph Berry, Architect, 9, Queen-street, Huddersfield	" 4
Barnsley—Alterations to Manor House	School Board	F. J. Warden-Stevens, A.M.I.M.E., 34, Victoria-street, S.W.	" 4
Goiclar—Cloakroom, Knowl Bank School	Joint Hospital Committee	Chalmers and Co., Advocates, 18, Golden-square, Aberdeen	" 4
Kinghorn—Steading	Corporation	William Reed, Architect, Baldoum-square, Fraserburgh	" 4
Fraserburgh—Villa, Grattan-place	School Board	Wm. F. Bird, Architect, Midsumner Norton, Somerset	" 4
Banbury—Schools (518 places), Britannia-road	Urban District Council	G. E. T. Laurence, Architect, 22, Buckingham-street, Strand, W.C.	" 4
Wilkesdon, N.W.—Teachers' Centre, Leopold-road School	Pioneers' Industrial Society, Ltd.	W. S. Wilson, Architect, 119a, Fishergate, Preston	" 4
Udny—Additions to House and Farm Offices	Islington Borough Council	Senior and Clegg, Architects, Regent-street, Barnsley	" 4
Fulwood—Infectious Diseases Hospital	Guardians	J. E. Swindlehurst, City Engineer, St. Mary's Hall, Coventry	" 4
Barnsley—Four Houses, Park-avenue	Borough Council	Austin and Paley, Architects, Lancaster	" 4
Coventry—Fire Station, Hales-street	North Dublin R.D.C.	James Hill, The Cross, Fernhurst	" 4
Rawtenstall—Church at Constable	London County Council	Edward J. Toye, Architect, Strand, Londonderry	" 4
Fernhurst—School	School Board	Johnstone Bros., Architects, 39, Lowther-street, Carlisle	" 4
Londonderry—Children's Wing to Nazareth House	Middlesex County Council	C. G. Baker, Architect, Town Hall Chambers, Great Yarmouth	" 4
Carlisle—Improvements to Charlotte-st. Congregational Church	St. George's (Hanover-sq.) Guardians	W. H. Bosker, Monumental Mason, Rusbon-road, Wrexham	" 4
Great Yarmouth—Additions, 9, Gordon-road, Southtown	Urban District Council	Colson, Farrow, and Nisbett, 45, Jewry-street, Winchester	" 4
Wrexham—Six Houses, Hampden-street	Pioneers' Industrial Society, Ltd.	J. B. Morgan, Architect, Llanelly	" 4
Newport, Isle of Wight—Repairs to Church Tower	Urban District Council	R. L. Roberts, Architect, Victoria Chambers, Abercrombie	" 4
Llanelly—Classrooms, Bign Boys' School	Islington Borough Council	H. T. Wakelam, County Surveyor, Guildhall, Westminster, S.W.	" 4
Aberbeeg, Mon.—School (426 places)	Guardians	Edwin T. Hall, F.R.I.B.A., 57, Moorgate-street, E.C.	" 4
Hounslow—Additions to Polytechnic	Borough Council	J. B. Morgan, Architect, Llanelly	" 4
Chelsea, S.W.—Children's Home, Milman-street	North Dublin R.D.C.	H. Shaw, A.M.I.C.E., Surveyor, Cranbrook-road, Iford	" 4
Llanelly—Corridor, Llakefield Infant School	London County Council	Holton and Fox, Architects, Corporation-street, Dewsbury	" 4
Iford—Pavilion, Central Park	School Board	C. Morse, High-street, Tynrefail	" 4
Dewsbury—Three Blocks of Four Houses	Urban District Council	Wm. Seaton Gray, Clerk, Council Offices, Whitby, Yorks	" 4
Tynrefail—Gallery in Bible Christian Chapel	Islington Borough Council	A. Hessel Tiltman, F.R.I.B.A., 81, Russell-square, W.C.	" 4
Whitby—Electric Light Station	Guardians	J. Smith, Architect, Ballinasloe	" 4
Holloway, N.—Tanks and Additions to Elec. Lighting Station	Borough Council	H. Mansfield Robinson, Town Clerk, Town Hall, Old-street, E.C.	" 4
Mount Bellow—Improvements in Workhouse	North Dublin R.D.C.	John O'Neill, Clerk, North Brunswick-street, Dublin	" 4
Shoreditch, E.—Generating Station, Whiston-street	London County Council	Vincent Davison, jun., Architect, Barley Lodge, New Malden	" 4
Cooleek, Dublin—Thirty-two Labourers' Dwellings	School Board	The Architect's Department, County Hall, Spring Gardens, S.W.	" 4
New Malden—Shop and Cottage, Elm-road	Industrial Co-operative Society	R. J. Lovell, Architect, 46, Queen Victoria-street, E.C.	" 4
Lowestoft—Boys' Home, Battery Green	Metropolitan Asylums Board	Geo. Thos. Wilson, Architect, 121, Durham-road, Blackhill	" 4
Ashford, Middlesex—Two Board Schools	School Board	T. Duncombe Mann, Clerk, Embankment, E.C.	" 4
Annfield Plain—Shops, &c.	Urban District Council	E. D. Ganson, Clerk, School Board Offices, Lerwick	" 4
Darenth—W.C. Annexes to Workshops	Town Council	H. H. Crowther, Engineer, Great Flot, near Birkenhead	" 4
Lerwick—Public School	Urban District Council	The Borough Surveyor, 30, Ker-street, Devonport	" 4
Liscard, Wallasey—Car-Sheds, &c., Seaview-road	Swindon and Highworth Guardians	J. R. Crowther, Engineer, Great Flot, near Birkenhead	" 4
Devonport—Alterations to Mortuary	Guardians	H. J. Bewick, M.S.A., Architect, 35, Regent-street, Swindon	" 4
Liscard, Wallasey—Engine and Pump House, Seaview-road	Hon. Douglas A. Tollemache	E. W. Mountford, F.R.I.B.A., 17, Buckingham-st., Strand, W.C.	" 4
Stratton St. Margaret—Infirmary, &c.	St. Giles' Guardians	Thos. Wm. Cotman, Architect, Northgate-street, Ipswich	" 4
Sheffield—Administrative Block at Fir Vale Infirmary	Holborn Borough Council	Edwin T. Hall, F.R.I.B.A., Architect, 57, Moorgate-street, E.C.	" 4
Feltham—Balmoral Hotel (200 rooms)	W. F. Egerton	Clarkson and Son, Architects, 28, Great Ormond-street, W.C.	" 4
Camberwell, S.E.—Infirmary Extension, Brunswick-square	School Board	Herbert Howarth, Architect, Regent-road, Morecambe	" 4
London, W.C.—Swimming-Baths, &c., Broad-street	Hewitt Bros., Ltd.	J. Chas. Spivey, Architect, Bank-street Chambers, Leeds	" 4
Morecambe—Rebuilding Royal Hotel	Endowed School Governors	Settle and Farmer, Architects, Ulverston	" 4
Huddersfield—Seven Cottages, Dalton Hill	Sheffield Laundry Co.	F. W. Ridgway, F.R.I.B.A., Borough Chambers, Dewsbury	" 4
Gawthfield—Additions to House	G. E. Moser	Henry Ward, Architect, 8, Bank Buildings, Hastings	" 4
South Ossett—School Extension	Munster and Leinster Bank	E. R. Ridgway, M.S.A., Long Eaton	" 4
Newhaven—Schools (500 seats), Meeching-road	Jos. Walker	John M. Dossor, A.R.I.B.A., 2, Manor-street, Hull	" 4
Borrowash—Additions to Bloso House	Crowe and Co., Ltd.	F. W. Ridgway, F.R.I.B.A., Borough Chambers, Dewsbury	" 4
Hull—Warehouse, Blackfriargate	Evershed, Ltd.	C. P. Ayres, Architect, Burville, Watford	" 4
Dewsbury—Hide Market	John Harrison	John Willis, Architect, Victoria Chambers, Derby	" 4
Watford—Lecture-Room, &c.	Ernest Carr	W. J. Taylor, Architect, Bank-street, Sheffield	" 4
Milford Haven—Wesleyan Church	Harding, Richardson, Rhodes, & Co.	T. Sturrock, Clerk, Dalketh	" 4
Hillsborough—New Premises		John Stalker, M.S.A., Architect, Kendal	" 4
Dalketh—School		S. M. Chadwick, Archt., Bindloss Chmbs., Chapel-walks, Manchester	" 4
Kendal—Refroniting Shops, 47 and 51, Highgate		Arthur Hill, B.E., F.R.I.B.A., 22, George's-street, Cork	" 4
Manchester—Playground and Offices		Garstide and Pennington, Architects, Pontefract	" 4
Dunmanway—Offices, &c.		W. Hamilton Fearnley, Architect, Featherstones	" 4
Castleford—General Post Office, Bank-street		Freeman, Son, and Gaskell, Architects, 11, Carr-lane, Hull	" 4
Featherstone—Three Houses and Shop		Corson & Jones & Perkins & Bulmer, Jt. Archts., Cookridge-st., Leeds	" 4
Hull—Bakery, &c.		G. F. Bowman, Architect, 5, Greek-street, Leeds	" 4
Leeds—Excavating for Warehouse		Garlick and Flint, Architects, Buxton	" 4
Horsforth—Ten Through Houses, Featherbank-road		Fred Mitchell, Architect, 9, Upper Fountains-st., Albion-st., Leeds	" 4
Dove Dale—Additions to Peveril Hotel		Joseph Graham, Architect, Bank-street, Carlisle	" 4
Leeds—Stable, &c.		D. L. Jones, Architect, West End, Llanelly	" 4
Carlisle—Shops, &c.		Johnstone Bros., Architects, 39, Lowther-street, Carlisle	" 4
Gorseinon—Baptist Chapel		William Bakewell, F.R.I.B.A., 39, Park-square, Leeds	" 4
Scotby—Villa, Copse-hill			" 4
Leeds—Alterations to Tower Works			" 4

ELECTRICAL PLANT.

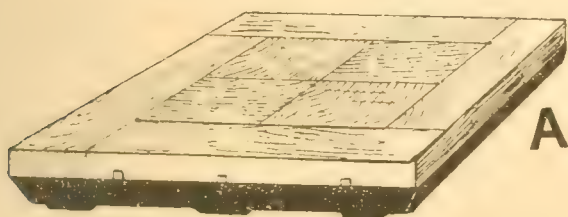
Bradford—Electric Tramway Equipment (5 miles)	Tramways Committee	The City Surveyor's Office, Town Hall, Bradford	Feb. 2
Wigan—Steam Dynamos (two 210kw.), &c.	Electric Light Committee	H. Collings Bishop, Borough Electrical Engineer, Wigan	" 2
Luton—Wiring Various Buildings	Town Council	Geo. Sell, Town Clerk, Town Hall, Luton	" 4
Manchester—Car Trucks, &c.	Corporation	J. M. M'Elroy, Gen. Mgr., Tramways Dept., Town Hall, Manchester	" 4
Great Yarmouth—Electric Traction Plant	Corporation	Preece and Cardew, 13, Queen Anne's-gate, Westminster, S.W.	" 5

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ELECTRICAL PLANT—(continued).

Leeds—Poles, &c., for Overhead Electric Wires	Tramways Committee	The City Engineer's Office, Municipal Buildings, Leeds	Feb. 6
Southend-on-Sea—Four Electric Motor-Cars for Pier Tramway	Corporation	A. Fidler, A.M.I.C.E., Borough Engineer, Southend	6
Hull—Multipolar Generator	Corporation	The City Treasurer, Town Hall, Hull	8
Carlisle—Elec. Light Installation, Charlotte-st. Cong. Church	Corporation	Johnstone Bros., Architects, 39, Lowther-street, Carlisle	9
Batley—Dynamos	Corporation	Lacey, Clirehugh, and Sillar, 2, Queen Anne's-gate, Westminster	9
Edinburgh—Engine and Dynamo, McDonald-road	Lord Provost and Council	The Resident Electrical Engineer, Dewar-place Station, Edinburgh	9
Wolverhampton—Electric Travelling Crane (10-ton)	Tramways Committee	J. W. Bradley, C.E. Borough Engineer, Town Hall, Wolverhampton	11
Walworth, S.E.—Plant for Elec. Light Station, Penrose-street	Southwark Borough Council	Kincaid, Waller, & Manville, Engineers, 23, Great George-st., S.W.	13
Brighton—Tramway Feeder Cables	Rec.-Gen. & Director of Contracts	T. B. Holliday, Tramways Engineer, Town Hall, Brighton	13
Valletta, Malta—Arc Lamp Carbons 75,000	Stourbridge & Halesowen Hosp. Com	The Crown Agents for the Colonies, Downing-street, S.W.	14
Halesowen—Electric Bells at Hospital, Hayley Green	Town Council	A. T. Butler, Architect, Cradley Heath	15
Stirling—Electrical Plant	Urban District Council	Kennedy and Jenkin, 17, Victoria-street, Westminster, S.W.	15
Long Eaton—Electrical Plant, &c.	Spanish Government	Frank Worrall, A.M.I.C.E., Council Offices, Long Eaton	18
Huelva, Spain—Telephone System	Corporation	The Commercial Department of the Foreign Office, Whitehall, S.W.	21
Glasgow—Car Equipments 100	Urban District Council	John Young, General Manager, 83, Rindal-street, Glasgow	22
Beckenham—Boilers, Dynamo, Batteries, &c.	Town Council	Reginald P. Wilson, 68, Victoria-street, Westminster	25
Bournemouth—Electric Cars (42)	Corporation	F. W. Lacey, M.I.C.E., Boro' Eng., Municipal Offices, Bournemouth Mar. 2	2
Bournemouth—Dynamos, &c.	The Burgomaster	F. W. Lacey, M.I.C.E., Boro' Eng., Municipal Offices, Bournemouth	2
Amsterdam—Electrical Plant, &c.		The Direction of Printing Works, Achterburgwal 213, Amsterdam April 1	1

ENGINEERING.

East Dereham—Four Purifiers	Urban District Council	B. H. Vores, Clerk, East Dereham	Feb. 2
Middleton, Lancs.—Road Scarifier	Corporation	W. Welburn, Borough Surveyor, Town Hall, Middleton	2
Dumfries to Moniaive—Cairn Valley Light Railway (16½ miles)	Glasgow and South-Western Ry. Co.	F. H. Gillies, Secretary, St. Enoch Station, Glasgow	4
London, S.W.—Sweeping and Road-Scraping Machines	Middlesex County Council	H. T. Wakelam, County Engineer, Guildhall, Westminster, S.W.	4
Basford, Notts—Extension of Mains	Rural District Council	G. and F. W. Hodson, Engineers, Bank Chambers, Loughborough	4
Okhampton—Waterworks Extension	Town Council	A. Lucas, F.S.I., Engineer, Guildhall Chambers, Exeter	4
Birkenhead—Hot-Water Service, Workhouse Nurses' Home	Guardians	Edmund Kirby, Architect, 5, Cook-street, Liverpool	4
Dover—Water Mains	Town Council	Henry E. Stiggo, A.M.I.C.E., Town Hall, Dover	5
Lymington—Sewer Outfall Repairs	Town Council	I. Pym Jones, Borough Engineer, 83, High-street, Lymington	5
Great Yarmouth—Boilers, &c.	Corporation	J. W. Cockrill, M.I.C.E., Boro' Surveyor, Town Hall, Gt. Yarmouth	5
Brotherton—Steel Bridge (240ft. span)	North-Eastern Railway Co.	W. J. Cudworth, Engineer, York	6
Dartmouth—Mooring Pit, &c.	Harbour Commissioners	W. Smith, Clerk, Dartmouth	6
London, E.C.—Locomotive Tenders	East Indian Railway Co.	C. W. Young, Officiating Secretary, Nicholas-lane, E.C.	6
Naas, Ireland—Deepening Well	Rural District Council	F. Bergin, Engineer, Kildare	6
Cheesham—Water-Supply Works	Urban District Council	John Taylor, Sons, & Sons, Crisp Civ. Eng., 27, Gt. George-st., S.W.	6
Aberdeen—Condensers, &c.	Electric Lighting Committee	J. Alex. Bell, City Electrical Engineer, Cotton-street, Aberdeen	11
Weston-super-Mare—Widening Parade	Urban District Council	Hugh Nettleton, Engineer, Town Hall, Weston-super-Mare	11
Southwick—Dam, &c.	Town Council	Francis J. C. May, M.I.C.E., F.S.I., Town Hall, Brighton	11
Edinburgh—Gasworks Plant, &c.	Gas Commissioners	W. R. Herring, Chief Engineer, Gasworks, New-street, Edinburgh	11
Campbeltown—Waterworks	Water Committee	James Fullarton, Master of Works, Campbeltown	11
Hornsey, N.—Forced Draught Works	Urban District Council	E. J. Lovegrove, Engineer, 99, Southwood-lane, Highbury, N.	11
Kirkcaldy—Boilers	Corporation	Wm. L. Macindoe, Town Clerk, Kirkcaldy	15
Walsall—Purifiers, &c.	Gas Committee	B. W. Smith, Fleck Gasworks, Walsall	16
Croydon—Boilers	Town Council	The Borough Electrical Engineer's Office, Factory-lane, Croydon	16
Brigstock—Well	Parish Council	Beeby Thompson, F.G.S., Northampton	18
Wimbledon—Boilers, &c.	Urban District Council	F. Barnes Spencer, Electrical Engineer, Dursford-rd., Wimbledon	18
Coventry—Heating, &c., Fever Hospital	School Board	J. E. Swindlehurst, City Engineer, 10, Hay-lane, Coventry	18
Swansea—Hot-Water Heating Apparatus, Manselton School	London County Council	G. E. T. Laurence, A.R.I.B.A., 22, Buckingham-st., Adelphi, W.C.	19
Camberwell, S.E.—Water-Tube Boilers	Lancashire and Yorkshire Ry. Co.	The Engineer's Department, County Hall, Spring Gardens, S.W.	19
Manchester—Connecting Lines at Collyhurst (½ mile)	Electrical Committee	The Engineer's Office, Hunt's Bank, Manchester	19
Bristol—Coal Conveyor, &c.	Corporation	H. Faraday Proctor, City Electrical Engineer, Temple Back, Bristol	21
Wellington, New Zealand—Engines, &c.	Urban District Council	John Duthie and Co., Ltd., 23, Lime-street, London, E.C.	28
East Dereham—Four Purifiers	Waterworks Committee	B. H. Vores, Clerk, East Dereham	Mar. 2
Lincoln—Deep Boring at Boultham	Works Committee	P. Griffith, A.M.I.C.E., Eng., 54, Parliament-st., Westminster, S.W.	4
Santander, Spain—Dredger	Argentine Government	The Commercial Department of the Foreign Office, Whitehall, S.W.	11
Rosario—Harbour Works	Guardians	The Commercial Department of the Foreign Office, Whitehall, S.W.	10
Burnley—Two Lancashire Boilers at Workhouse	Rhymney Iron Co., Ltd.	J. S. Horn, Clerk, Union Offices, Burnley	—
Rhymney—Large Water-Main		The Engineer, Rhymney Iron Co., Ltd., Rhymney, Wales	—

FENCING AND WALLS.

Lee, S.W.—Oak Fencing, &c., Northbrook Park	London County Council	The Parks Department, 11, Regent-street, S.W.	Feb. 5
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FURNITURE AND FITTINGS.

Chester-le-Street—Fixtures for Grocery Department	Co-operative Society	Wm. and T. R. Milburn, Architects, 20, Fawcett-street, Sunderland Feb. 2	2
Romey, Hants—Bedsteads, &c., at New Infirmary	Guardians	John Allsop, Clerk, The Abbey, Romey	5
Ashbourne—New Offices, Compton-street	Guardians	Naylor and Sale, Architects, Iron-gate, Derby	5
Bridgend—Tables, Chairs, Wardrobes, &c. (for 150 patients)	Glamorganshire County Asylums	Hugh W. Davies, Clerk of Asylums, Bridgend	12
Banbury—Board-Room and Offices	Guardians	Walter E. Mills, Architect, Horse Fair, Banbury	—

PAINTING.

Manchester—Various Stations	Lancashire and Yorkshire Ry. Co.	The Engineer's Office, Hunt's Bank, Manchester	Feb. 4
Darlington—Woolpack Inn	West Auckland Brewery Co.	F. H. Livesay, Architect, 107, Newgate-street, Bishop Auckland	4
Grington, Yorks—Interior of Baptist Chapel	School Board	E. Hudson, Curator, 16, Washington-street, Grington	4
Rise Carr, Darlington—Two Schools	Alex. Gordon	G. Gordon Hoskins, F.R.I.B.A., Court Chambers, Darlington	5
Halifax—Twelve Houses, Albert Reservoir	School Board	Medley Hall, M.S.A., 29, Northgate, Halifax	5
Fraserburgh—Villa, Grattan-place	Watch Committee	Wm. Reed, Architect, Saltoun-square, Fraserburgh	6
Glecar—Cloakroom, Knowl Bank School		J. Berry, Architect, 2, Queen-street, Huddersfield	6
Newcastle-upon-Tyne—Seven Police Stations		The Committee Clerk's Office, Town Hall, Newcastle-upon-Tyne	7
Rawtenstall—Church at Constable		Austin and Paley, Architects, Lancaster	8
Carlisle—Congregational Church, Charlotte-street	Trustees	Johnstone Bros., Architects, 39, Lowther-street, Carlisle	9
Castleford—Primitive Methodist Schools and Chapel	School Board	John Townend, Secretary, Pontefract-road, Castleford	12
Lerwick—Public School		R. D. Ganson, Clerk, School Board Offices, Lerwick	20
Horsforth—Ten Houses, Featherbank-road		G. F. Bowman, Architect, 5, Greek-street, Leeds	—

PLUMBING AND GLAZING.

London, W.—Plumber's Work and Materials (One Year)	St. Marylebone Borough Council	J. Paget Waddington, C.E., Town Hall, Marylebone-lane, W.	Feb. 2
Barneley—Manor House	Joint Hospital Committee	J. H. Taylor, M.I.C.E., Borough Surveyor, Barnsley	6
Fulwood—Infectious Hospital	School Board	J. A. Seward and W. Rawcliffe, Archts., 119A, Fishergate, Preston	7
Lerwick—Plumbing and Gasfitting Work to Public School		R. D. Ganson, Clerk, School Board Offices, Lerwick	20

ROADS AND STREETS.

Haslemere—Making-up Foundry-road	Hambleton Rural District Council	Edward L. Lunn, Surveyor, 36, High-street, Guildford	Feb. 2
Edinburgh—Forming Approach Avenue	Corporation	J. Proudfoot, City Road Surveyor, City Chambers, Edinburgh	2
Normanton—Improvements at St. John's-terrace	Urban District Council	Arthur Hartley, Surveyor, County Chambers, Castleford	4
Cleethorpes—Making New Streets	Sidney College Estate	T. Lamming, Surveyor, 43, Victoria-street, Grimsby	4
Keighley—Paving, &c., Parson-street	Corporation	W. H. Hopkinson, A.M.I.C.E., Borough Engineer, Keighley	5
Deptford Park, S.E.—Wood Paving	London County Council	The Parks Department, 11, Regent-street, S.W.	5
Bicester—Highway Repairs (One Year)	Rural District Council	J. W. Tubb, Highway Surveyor, Chesterton Fields, Bicester	5
Tooting, S.W.—Making-up Moring-road	Wandsworth Borough Council	H. G. Hills, Town Clerk, Council House, Wandsworth, S.W.	5
Hove—Wood Paving, Holland-road and Church-road	Urban District Council	H. H. Scott, Borough Surveyor, Town Hall, Hove	6
Babby-with-Hexthorpe—Street Works	Urban District Council	R. A. H. Tovey, Clerk, Council Offices, Babby	6
Rushden—Forming, &c., Robinson-road	Urban District Council	W. B. Madin, C.E., Town Surveyor, Vestry Hall, Rushden	6
Featherstone—Street Improvements	Urban District Council	F. B. Rothera, Surveyor, Featherstone	6
Fulwood—Roads, Paths, &c.	Joint Hospital Committee	J. A. Seward and W. Rawcliffe, Archts., 119A, Fishergate, Preston	7
Baldon—Street Works, Park-lane	Urban District Council	J. E. Pickard, Surveyor, Baldon	9
Church—Paving Streets	Urban District Council	W. E. Wood, Surveyor, District Council Offices, Church, Lancs	11
Leamington—Road Works	Corporation	W. de Normanville, Borough Engineer, Town Hall, Leamington	11
Mansfield—Making-up Duke-street	Corporation	R. F. Vallance, Boro' Surveyor, White Hart Chambers, Mansfield	12
Harrington—Street Improvements	Urban District Council	C. W. Eaglesfield, Surveyor, Council Offices, Harrington	13
Dowlaia—Forming New Streets	E. Davies	William Dowdeswell, Architect, John-street, Treharris	13
Heath, Chesterfield—Street Works	Hardwick Colliery Co.	W. M. Ashmore, Architect, New Queen-street, Chesterfield	—

SANITARY.

Burntisland—Sewer, Road, &c.	James Shepherd	William D. Sang, C.E., Kirkcaldy	Feb. 2
Abridge—Drainage Works	Ongar Rural District Council	Arnold Richardson, Clerk, Council House, Ongar	4
Withington—Sewering and Paving Works	Urban District Council	A. H. Mountain, A.M.I.C.E., Surveyor, Town Hall, Withington	4
Leyton—Sewers, &c.	Corporation	W. Dawson, M.I.C.E., Town Hall, Leyton	5
Burton-upon-Trent—Public Convenience	Corporation	Geo. T. Lynam, Borough Engineer, Town Hall, Burton-upon-Trent	6
Rochdale—Sewering and Bouldering Fourteen Streets	Corporation	S. S. Platt, M.I.C.E., Borough Surveyor, Town Hall, Rochdale	6
Blantyre, Scotland—Sewers, &c. (3½ miles)	Lanark District Committee	W. L. Douglass, C.E., Dist. Engineer, 3, Clydesdale-st., Hamilton	8
Halesowen—Sinks and Baths at Hospital, Hayley Green	Stourbridge & Halesowen Hosp. Com	A. T. Butler, Architect, Cradley Heath	10
Evesham—Sewerage Works	Corporation	R. E. W. Berrington, Engineer, Bank Buildings, Wolverhampton	16

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EXPERTS AND THEIR REMUNERATION.

THE technical expert holds a recognised place in the practice of architecture, which has become a much more complex business than it was in the century now closed. As a necessary intermediary between the architect and the tradesman, the expert occupies a position that at one time was held by the foreman of the builder—say a carpenter or plumber. Any part of the construction that called for a more than usual amount of skill, such as the construction of a roof of wide span, or any ironwork, was left to the foreman to supervise, under the architect's general control, in the buildings of the day. We have now buildings in which the design, the structural work, the heating and sanitary arrangements, the electric wiring and light installations, hydraulic lifts, &c., are far beyond the acquirements of skilled mechanics. A new order of men, possessing a higher standard of education, and who now have been trained specially for these branches of construction, have arisen, to whom the architect has to trust special departments of his work. In America the position and function of the expert is fully asserted, and large architectural firms have to employ them among their permanent staff, or to deal with them as specialists under the contract. Steel skeleton structures, large heating and lighting and electric installations, sanitary fittings, &c., demand the employment of experts, and no architect would think of preparing designs and drawings for any of these matters, or superintending their execution, single-handed. In this country the manufacturer or tradesman often acts in this capacity, or the work is sublet to him, the architect exercising a control under the contract. We have, indeed, a few professional experts in sanitation, heating and ventilating, electric lighting, and these are sometimes called in, or undertake the supervision of such work; but they are not yet so fully recognised by the architect. May it not be worth while to consider the advantage or otherwise of the employment of experts in these special branches of construction, as colleagues or assistants of the architect? The late Sir Charles Barry and Sir Gilbert Scott engaged expert engineers to assist them in the design and construction of certain structural works, such as the great iron roof over St. Pancras Station of the Midland, and many of the principal iron roofs designed by architects have been supervised by experts. Sir Gilbert Scott, we believe, called in Mr. Shields to assist him in the ironwork ties, &c., required in the restoration of Salisbury spire. For a building with a large roof of iron or steel construction, expert assistance in the supervision, and perhaps also in the design, appears absolutely necessary. We cannot expect the architect to know the proper size of sections for steel principals, struts, or tie-rods; the best detail for a hinged joint, or for the seating of a long girder to allow for changes of temperature. Such details for a large span are better left to the structural engineer. A building with complex ironwork affords a good opportunity for a division of skill and experience. The more complex the building, the greater is the need of expert supervision. A modern hotel with all the accessories of hydraulic-power lifts, electric lighting, sanitary fittings, and warming and ventilating arrangements; or an "up-to-date" theatre with fire-resisting

appliances, hydraulic appliances for stage, fire extinction, ventilation, machinery, &c.; or a block of City offices fully equipped with the latest arrangements for warming, lighting, and ventilating, is beyond the ordinary duties imposed on the architect. In the arrangement and details of these appliances, he must seek the opinion and experience of the specialist, or leave them uncontrolled to the contractor or tradesmen. As the bricklayer, carpenter, and mason require the guidance of the foreman, so the tradesmen who contract for the fixing of the hot-water pipes and apparatus, hydraulic lifts, or electric power and lighting installations, naturally fall under the control and supervision of men who are experts in these branches. Then there are the items of extra cost and labour to be considered. The engineering arrangements of public buildings like workhouses, asylums, hospitals, necessitate careful plans and estimates. The cold- and hot-water supply, heating, lighting, and power arrangements form, as we have been reminded, important items in the expenditure. Who will say that the architect unaided is able to arrange these matters satisfactorily? Expert advice in the carrying-out of the scheme would often make a considerable saving in the cost. In this country, at least, the special engineering arrangements are left to the contractor or firms who contract for the work, instead of being made at the onset according to plans previously devised by competent experts. The consequence of this neglect is that alterations have to be made in the structure; brickwork has to be cut for flues and ducts, and openings made in the floors; shafts built after the work is advanced, and sundry minor details altered, creating additional expense. We know that original estimates for these engineering works are often drawn up by surveyors who do not know the requirements—the result is a heavy cost for extras when the work is completed.

The expert being thus a recognised agent in large and complicated buildings, the question arises: What should be his relation to the architect? Is he to be engaged at the commencement of a work to assist the architect in preparing his plans and estimates, or be consulted afterwards as the building progresses and his help becomes necessary? In ordinary English practice the latter alternative is generally adopted. For example, the architect's designs for special iron construction is submitted to an engineer for his advice in the preparation of the drawings and details. In ordinary practice this course may be sufficient, but in buildings where the structure is chiefly of iron and steel, or where special engineering skill is necessary in the preparation of drawings and specifications for water supply, heating apparatus, &c., as in public baths and washhouses, the professional expert ought to be consulted at the onset, and, in fact, it appears that in architectural firms that have a large practice in the design of buildings involving special structural, mechanical, sanitary, and heating problems, he is often engaged as a member of the staff. The expert is more recognised by our American *confrères* in the profession, as we all know. In fact, there are certain branches of architectural practice, in which these engineering and special problems occupy a more prominent place than the architectural design; where the architect's work is secondary and subordinate to them. A public set of baths and washhouses, a bridge, a railway station, and a market are structures in which the engineer or specialist is chiefly concerned, and it would be hardly an exaggeration to say, in one sense, that such buildings are the joint productions of two or more rather than one mind. In such cases the architect ought to be considered the leader of a set of experts, who co-operate with him in the design and its execution. A further question arises as

to the fees or commissions made by experts in buildings of this description.

The great professional organisation known as the Convention of the American Institute of Architects, at Washington, has of late been discussing a great many topics of interest to the profession. One of the reports presented was on the result of a conference with the American Society of Heating and Ventilating Engineers. The very important place assigned to heating and ventilation in the architecture of the States has necessitated the employment of experts on the staff of leading architects or separately, and the authorisation of proper fees. The profession, therefore, represented by the American Institute have had a conference with a committee appointed by the above society of engineers, together with sanitary, electrical, mechanical, and other experts, and with architects representing all classes of practitioners, and have come to an agreement of opinion on the following points:—“(1) That in the design, construction, and equipment of modern buildings, the problems of sanitary, electrical, and mechanical engineering, of heating and ventilation, of structural work and foundations, are much more complicated, and their solution much more expensive, than was the case when the present schedule of charges of the Institute was first adopted, at which time, to use words taken from a recent convention report, ‘the erection of a building could safely be left to a competent carpenter's foreman, or to a master mason,’ and that this development has in many cases rendered necessary the employment of experts, either permanently on the staff of the architect, or by engagement for a specific work. (2) That the amount of labour and expense required from an architect now, even when the best of experts are engaged, and independent of their fees, is greater than was contemplated when the present schedule was adopted, but is necessary for the moulding of those parts into complete harmony with the architect's design in all classes of work. (3) That the usual charge for efficient expert service is 5 per cent. of the cost of the special work involved, where this amounts to 10,000 dol., with a gradual increasing of the percentage as the amount diminishes from 10,000 dol. down to 2,000 dol. (4) That the expense of expert service should be paid by the client, as a necessary part of the cost of the work. (5) That the architect should select the engineer or expert, whose work should be subordinate to that of the architect, and should be done under his direction in hearty co-operation with him. (6) That the architect should assume all expense for expert services necessary for the proper execution of a work, and that the schedule fees for heating and ventilation, sanitary, electrical, and mechanical work should be 10 per cent. on the cost of these parts.” It is therefore recommended that the schedule of charges of the Institute be so amended that the minimum charge for professional services in connection with these branches of engineering shall be 10 per cent. on the cost of these portions of the work, the architect to select and to approve any experts required, and to assume all expense for their services, whether rendered by members of his own staff or engaged for a specific work.

These recommendations are, we think, reasonable, and the remuneration suggested not too high. Clause 2 very justly expresses the fact that the amount of labour and expense incurred by the architect, even when the best experts are employed, is greater than formerly. This increased labour and skill on the architect's part is chiefly entailed in the greater effort necessary in bringing all the expert branches of the work into harmony. In a simple contract where the architect alone designs and supervises the work, he is not hindered or hampered by

conflicting conditions; he has not to alter or modify his plans for, say, the requirements of the heating-engineer, or the electrician, there is nothing to bring into harmony with the straightforward tenor of his own work. But the architect of a large complex building, of numerous different requirements and branches of expert labour, has his hands full in bringing each tradesman into line with his design. The demands of the hot-water or ventilating engineer must not be allowed to interfere or clash with the design of the apartments or the exterior; the hydraulic lift arrangements have to be studied in connection with floors and ceilings; the electrician must not be allowed to run riot over the ornamental or panelled ceilings in the "wiring" of the building, and the structural engineer's requirements have to be adjusted and brought into unison with the architectural treatment. Expert assistance, as we have hinted, is not recognised in this country to the extent it is in America, where the steel structure and the installation of a great many services are required. The schedule sanctioned by the R.I.B.A. leaves any extra charges optional, a higher rate of percentage being permitted in certain circumstances, as in designs for fitting of buildings and furniture or decoration. Where "5 per cent. is not remunerative, the architect's charge is regulated by special circumstances and conditions." Works costing less than £1,000 are also to be charged for in this manner. Thus, in the revised scale of the R.I.B.A., there is no clause referring to the remuneration of experts when these are necessary; this is perhaps regrettable. In the revised form lately issued, Clause 2, which describes services not included in the 5 per cent. commission, refers to negotiation about site, surveying site, and taking levels, making surveys and plans of buildings to be altered, party-wall arrangements, rights of light for services in connection with litigation or arbitration, &c., but not a word about services in connection with the requirements of structural, heating, ventilating, or electrical engineers, in those technical branches of construction that now are so intimately mixed up with the architect's functions. The omission ought to be supplied when another revision of the schedule takes place, and it would be of some advantage to fix a scale of fees for experts engaged in building, and for the additional skill and labour of the architect in consulting and arranging with them. At least a minimum charge for professional services in connection with sanitary, mechanical, heating, and ventilating and electrical fittings might be fixed. Of course, the architect would in every case appoint the engineer or expert, and it is equally necessary that these subsidiary but necessary parts of the design should be placed under the architect's direction and control. Unfortunately, such a control is not universal; the structural engineer or electrician is often left to the contractor, or contracts to do the work on his own initiation, the consequence of which is a continual clashing with the design, details, and intention of the architect. Without co-operation the most accomplished specialists must fail to produce anything but the most discordant result.

THE CONDUCT OF COMPETITIONS.

THE AMERICAN CODE.

WE lately referred to the "Revised Suggestions" for Competitions of the Royal Institute of British Architects (page 49 ante), and we now have the code approved by the Convention of the American Institute of Architects. Both schemes aim at a more definite statement of terms than have hitherto prevailed, and we now give the leading points in the American code, from which a comparison with the English form

can be made. The construction of the American code is not so precise in its logical procedure as that to which we have referred. The appointment of assessors of assessors is not placed first, as in the Institute suggestion, which appears to be the right order. Referring to this part of the American code, "The Professional Adviser and the Jury," it is stated: "It is highly desirable, in the interests of both owner and competitors, that a professional adviser should assist in the preparation of the programme, and that the adviser or a competent jury, consisting at least in part of experts, should assist in making the awards. The professional adviser or jury may have full power to make the award, or they may select a number of designs, and, placing them in the order of merit, leave the final choice to the owner or his representative. Where possible the adviser or the jury should make a positive report, and in favour of one design, and recommend the employment of its author as architect for the building." We like the coupling of the word "jury" with adviser. In many building designs submitted in competition, especially those of an elaborate or complicated nature, one or even two assessors may be inadequate to determine the merits of the design, whereas a jury, consisting in part of experts, would insure a more satisfactory decision. The second clause also contains a useful alternative. The adviser or jury "may select a number of designs," and place them in order of merit, leaving the final choice to the promoters, thereby giving the latter, if they desire it, the final choice. The responsibility of selecting a design is thereby thrown on the promoters. Suppose three designs in order of their merit are so selected for the final determination of the promoter or committee. It is quite possible that design No. 2, or even 3, has redeeming qualities, or its author has claims higher than the designer of No. 1. Sub-clause (c) of the Institute suggestions corresponds to this clause, and runs "To advise the promoters on the relative merits of the designs, and to make a selection in accordance with the conditions"; but the latter qualifying part of the sentence may frustrate the best intentions, as, for example, if the best design costs more than the limits proposed, it may be rejected for an inferior design. On the whole, we rather think the American code on this point is more open, and would aid better in the selection of the best design.

The code begins with laying down three forms of competition (a) limited to a certain number of architects, each of whom is invited; (b) open to all who desire to enter, or to all of a certain class; (c) mixed, certain architects being invited, but others at liberty to take part. These forms compare with those of the R.I.B.A., except the "mixed." As to the payment, the first prize is to be the award of the commission to design the building and superintend its construction, (the programme so stating), the author being paid at the rates of the American Institute; but should there be delay or abandonment, then the successful competitor is to receive a substantial payment, to be regarded as on account of the final commission. In limited competitions a fixed amount should be paid to each competitor.

The last part of the code describes the "programme," or, as we call it, the "instructions," to architects. Under various heads, distinguished by letters, the several particulars are given—viz., the name of owner or his representatives who institute the competition—if the latter, their authority and scope; the kind of competition, if limited, names of competitors if open, whether it is limited geographically or otherwise; the time and place for receipt of designs (time should not be altered except with the unanimous consent of the competitors); the limit of cost, accommodation,

and conditions of site; the uniform requirements for the drawings—the number, scale, and method of rendering, which should be of the simplest kind; if the submission of more than one design is allowed; if anonymously conducted, the method proposed; the names of the adviser or jury, and the method for their selection, and his or their power; provision for the rejection of drawings which violate the terms; that no communication should take place, except in writing, between any competitor and the owner, the professional adviser or juror, and that any such answer to such communication or not shall be in writing simultaneously to all competitors; a date to be fixed, after which no question will be answered. Other particulars relate to the amount of the awards or prizes, the period of time within which the decision will be rendered, as to the exhibition of drawings, and if with the consent of the author, &c.

In this programme several good points occur: one is the authority of the promoter of the competition, and, if instituted by a representative of the owner, his authority. Such a clause ought to prevent fictitious invitations of designs by persons who have no authority for doing so, or intention of carrying out the terms—instances of which are known to many. Numerous competitors have thrown away their talents and labour and expense, by submitting drawings at the instance of a committee without authority from the Board.

It is also a good thing to inform competitors of the names of those who are about to compete in a limited contest. Uniformity of the mode of delineation and scale in competitions is absolutely necessary, and the code distinctly gives preference to simple drawing capable of explaining a scheme rather than a perfect design studied in all its parts. The importance also of securing uniformity in the nature of the instructions given is indisputable, and it is only fair to prevent that irregular and desultory correspondence that sometimes takes place between a competitor and a member of the committee, or their official or adviser as to points in the instructions. These should be answered simultaneously, so that everyone should obtain the same instructions. These points are secured by clauses (b), (e), (j) in the code. The revised form suggested by the R.I.B.A. is more explicit in stating the conditions that should exclude a design, and these are placed under distinct heads—(a) if sent after the period named; (b) if it does not give the accommodation asked for; (c) if it exceeds limits of site as shown; (d) if its probable cost will exceed the outlay stated or the estimate sent in, unless the question of cost has not been considered by the assessor, and he considers the amount stated inadequate, in which case he will not be bound by this condition. One of the terms in this form does not appear in the code—namely, "that each design is to be accompanied by a declaration, signed by the competitor, stating that the design is his own personal work, and that the drawings have been prepared under his supervision." However desirable such a condition may be to secure designs from competent men, we are not quite sure that it can always be fulfilled in the case of buildings of a very technical kind, where a great deal of the scheme must be delegated to special designers. In America, at least, it would be almost impracticable to obtain such a declaration, or one that could be conscientiously made.

Both forms of competition are now before the profession: there is something in each that the other could usefully appropriate. The R.I.B.A. form is more precise and exact in its terms and statements, though not more complete. The English form postulates the appointment of one or more professional assessors as the first step to be taken, and describes their duties under three heads; the American code says

"It is highly desirable, in the interests of both owner and competitors, that a professional adviser or jury should assist in the preparation of the programme, and they may have full power to make the award, &c." In one case it is regarded as almost conditional, in the other it is recommended. The assessor in the first scheme is to abstain from competing, as also every promoter, and any employé of either; but there is nothing in the latter code to prohibit the adviser from sending in a design, though, of course, such a proceeding is not very likely to take place. The American Institute has endeavoured to draw up a set of rules for the conduct of competitions that shall be sufficiently elastic to meet various circumstances that may arise, and has avoided any exact statement of rules. A great deal is left to the owner or his representatives in the programme. The conditions of the competition are left open—as to whether it is to be anonymously conducted or not, and the method the judge or jury are to follow in their selection, and their power. This freedom in the mode of conducting competitions is, we believe, an advantage so long as the minimum of restrictions is guaranteed, as it encourages the best talent to compete. Unsuccessful and abortive competitions have more frequently been owing to an inadequate and incomplete statement of particulars—and rather to hard-and-fast conditions than to free, but well-considered terms. Thus, how often have we seen the best designs rejected, because they have exceeded the sum specified—a very inadequate amount, as it frequently turns out to be—or because the dimensions or accommodation laid down in the conditions have not been closely followed; or perhaps because the author has taken the liberty of improving upon the line of boundary, or altering an instruction to the benefit of the design. A well-considered code of instructions should not bind the competitor to follow certain figures that may prove to be illusory; nor preclude him from making any improvement when he sees one, at the cost of rejecting his design. It should, on the other hand, restrict him as to matter of delineation, scale, limits of site, and cost, and to compliance with instructions that will insure honest comparison and good design.

NEW CENTURY GREETINGS FROM PAST PRESIDENTS OF THE A.A.

AN interesting feature in the February number of the *Architectural Association Notes* is the publication of a series of New Century Greetings, written by about thirty living Past-Presidents of that society. The series begins with a retrospection by Mr. Robert Kerr, who occupied the chair during the session 1847-48. Another venerable member, Mr. Thos. Rickman, whose year of office is dated 1854-55, gives some advice as to the need of making drawings from buildings as distinguished from book knowledge, and he records his dislike to the "Discussion Section" of the A.A.; though, so far as can be judged, the objection referred to is one of sentiment merely. Some three years later Mr. John Norton presided, and the A.A.'s progress since his time he rightly describes as a marvellous record. Mr. J. W. Penfold, who held office in 1856-59, sums up his words of greeting with the advice, "Keep up always the spirit of comradeship; be rivals, if you like—friends always."

Among the Presidents who held the office twice Professor Roger Smith comes first (1860-1 and 1863-4), and no one knows better the risk which students run by substituting the acquisition of photographs of many buildings for study and drawing from a few well-chosen examples. "It is not drawings only, but buildings, that an architect has to make, and it is not at the drawing board only, but also at the actual thing itself, that he learns how to do this so as to put some good art into his work." Mr. Thomas Blashill 1862-3, as might be anticipated, is eminently practical, as he sums up the Architect's duties as comprised with designing, estimating, and

superintending buildings. "Eschew gardening, pastoral staves, and hammering of pots, but know about flowers. Be easy with archaeology. Study old work sufficiently, modern work incessantly. Study also workmen and tools. Form an opinion of every building new to you, and every published illustration—pray against twaddlers—stop your ears. (Have I not suffered fifty years under their droning!)" Mr. G. H. Christian is abroad, and so unable to reply to the invitation, and the President who followed him (1865-66), Mr. R. W. Edis, writes to say that he is too busy—with his own affairs, presumably—to send any advice or a few words of greeting. The President of 1867-8, Mr. R. Phené Spiers, as one of the earliest advocates of the "examinations" at Conduit-street, records his estimate of the progress of the movement, speaking of its remarkable development as having attained a standard of training far beyond the level which its early supporters ever dreamt of. Mr. Lacy Ridge (1869-70), strikes the chord of mutual help, urging the principle that "while boys may be taught, men should teach themselves." Mr. Thomas Henry Watson (1870-71) refers to the difficulty nowadays of obtaining aid from builders. Thirty years ago an architect could rely on getting assistance from an able man called a "builder," who combined a knowledge of all the trades, and was himself a master of one. To-day the contractor is generally absorbed in finance, and cares for little else. The workman has little personal interest in his work, and apprenticeship is going out. Good craftsmanship in future must depend upon the architect. This is not architecture, but it is the work of the architect. "Laborare est orare," with open tendering and competition prices; trade union rules, fluctuating markets and "corners" in materials; Building Acts and Local By-laws, all combined conspire against architecture sufficiently, without the pettifoggery of litigious contractors such as we recognise by experience under Mr. Watson's timely references. These are followed by others of a useful kind from Messrs. Rowland Plumbé and Mr. J. Douglass Mathews (1871-73), both of whom know the Association well as "old members." Mr. Geo. H. Birch (1874-5) writes from the restful sanctum of the Soane Museum, which he describes as the "cool, sequestered vale of life," and sends a greeting of hearty good-will, hoping that the lamp of architecture will burn brighter and clearer in the future. Messrs. Quilter, Florence, and S. Flint Clarkson, whose terms of office bring the messages down to 1880, are each in turn true to their records. The first named emphasises the heed of a knowledge of construction, the second urges "unanimity, relying on our own strength and sincerity, progressing with the changing times." The third touches feelingly upon the mutual goodwill engendered by the A.A. Excursions, with references to "strong voices from mountain sides to valley." We all remember the songs on these occasions. Messrs. Edward G. Hayes and Cole A. Adams carry the harmonious notes of concord down to 1885, the last named having been a popular president for two years in succession, and giving place to Mr. J. A. Gotch, who advocates accuracy of drawing and writing as essential, for while "imagination is a gift bestowed on a few, accuracy is a prize which can be won by many." Messrs. John Slater and H. D. Searles-Wood (1887-89) both left office after doing good work, and remain enthusiastic members of the A.A., and Mr. Leonard Stokes (1889-91) urges that there is always plenty of room "at the top," and hopes that when his old friends get there they will not forget to look round for their old President. Mr. H. O. Cresswell (1892-93) qualifies an adherence to the curriculum, which should form the basis of study, and not the be-all and end-all of an architect's education. Mr. E. W. Mountford, the popular leader of 1893 to 1895, urges enthusiasm, not of the after-dinner-speech sort, but the genuine article, which keeps a man working steadily through years of what seems like failure. "It is not to be supposed that success necessarily means a large balance at the bankers." Mr. W. D. Caröe (1895-96) condenses his longish greeting thus: "Study to regulate the prevalent go-as-you-please style of architecture." Mr. Beresford Pite (1896-97) says that the past century has witnessed a development in England of schools of domestic and ecclesiastical architecture that has given her a pre-eminence among European nations in these aspects of art, and he prays that English civil architecture may ennoble our civil and national

life during the 20th century. Mr. Hampden W. Pratt (1897-98) refers to the Italian philosopher who amused himself by constructing a scale of degrees for the measurement of professional envy, placed architects lowest in the scale, and attributed the small amount of envy amongst them to their precise, severe, and rigid studies.

Mr. Geo. H. Fellowes Prynne, whose presidency brings us down to the termination of the century, enlarges on the social side of the A.A. "It has resulted in friendships and good fellowship amongst its members; it has helped to take men out of themselves, and made them feel that they and their fellow students are brothers in art; it has done more to foster a true feeling of *esprit de corps* than perhaps any other detail of its system." The present President, Mr. Seth-Smith, of course, does not add his greetings to the series of expressions thus printed. His endeavour doubtless will be to realise, as far as may be, the advice given by his predecessors in office.

THE ART OF DESIGNING SMALL HOUSES AND COTTAGES.*

SUPPOSE that we have received a commission for a dwelling-house; that we have made ourselves sufficiently acquainted with our new client's wishes, his mode of life and habits, by getting him to write us very fully of everything he would like to be specially considered, discussing points with him, or visiting his home, as circumstances may suggest; and further that we have made full notes of all the instructions and information thus gathered for our own use; the first thing is to visit the site and devote some time to thinking out the problem on the spot. The site is the most important factor to be considered, for it usually suggests both the internal arrangement and the external treatment. If the site is a large one the position of the house upon it must be first determined. In past times the house was regarded mainly as a shelter, and this greatly influenced the choice of its position. But we do not to-day build so much shelters for people who live outside as dwellings for people from whence they may occasionally go out. A primary consideration then, must be to so place the house as to afford its occupants the greatest possible enjoyment of such beauty of adjacent country or grandeur of distant view as the site can command. While doing this, however, we must so place and design the house that it shall not stand out as a disturbing excrescence, but shall look at home in its place, in harmony with its surroundings. This consideration of the house as a detail in a larger picture will bring us to a determination of its general form, its treatment, and its colouring. Some positions demand a lofty building to crown or complete a spur of rising ground, for example, while others suggest that it be kept as low as possible, as when it nestles under some protecting hillside. And in the country the low house is usually more successful, more in harmony with the scenery, perhaps because it is suggestive more of man's dependence upon nature, less of his defiance of her powers. Some natural terrace may suggest a long house with all its rooms facing one way, or a ridge may indicate a double-faced house commanding the outlook down over each slope, or perhaps a steep hillside will ask for a house following its lines and clinging to it story by story, while a gentle slope will demand a general grouping of the roofs to give a sense of stability by contradicting it. In the choice of materials and colouring, harmony rather than strong contrast should be sought. There is only one sure way of obtaining this at all generally, which is to keep to local materials and local ways of using them. We may lay it down that strong reasons of use or economy are needed to justify a departure from these. Where a departure is made let the contrast with what is usual in the district be as slight as may be. We do not enough consider when we introduce for the first time into some valley a bright red roof, how it will haunt the eye from every point of view, and may go far towards marring the beauty of the whole scene by destroying its restfulness. We should let the surroundings which are to constitute the picture suggest the colouring of the new object we are about to introduce just as much as its form. In some places a low-toned

* By BARRY PARKER and RAYMOND UNWIN; a paper read before the Society of Architects last Thursday, evening, Feb. 7, by Mr. Raymond Unwin.

colour scheme, as stone walls and grey stone or slate roof, seem most fitting, in others the warmth and brightness of bricks and tiles; some invite the homeliness of whitewash, while others suggest the deep colouring of green or purple slate. Whatever it is, some definite colour scheme should be adopted and colours of paint and any enrichments made to contribute to it. Greatly as must the site influence the external treatment of the house, its internal arrangement will be even more definitely dictated by it. The position of each room in relation to the points of the compass and the outlook should be determined on the spot. No sacrifice is too great which is necessary to enable us to bring plenty of sunshine into all the main living-rooms. In the South of England perhaps some moderation must be observed in applying this rule, there being no inconsiderable number of days on which a too sunny room may become unbearably hot, and, where the size of the house will allow of it, to have an east and west room is often a great boon. But over the greater part of our country, certainly in the Midlands and the North, the importance of arranging for the few days when the sun is oppressive is small indeed compared with that of planning to suit the many days when every hour of sunshine is of the utmost value. The general rule, then, would seem to be to so contrive as to get the sunshine into a room at the time when it is likely to be most occupied. Let a study or breakfast-room be east or south-east, a general living-room or drawing-room south and south-west. A good western window in the room we most occupy in the latter part of the day gives us many an extra hour of daylight; while the opportunity it affords us of habitually seeing the bright colour of sunset is a privilege which is worth some effort to obtain. A kitchen is best north-east or east, for the first coming down into the fireless house may well have its cheerlessness reduced for the servants by what sunshine is to be had at an early hour; later in the day, when the kitchen is hot with cooking, the heat of the sun should not be added. A bathroom and bedrooms, too, are pleasant with an eastern aspect, though some cannot sleep in a room into which early sunshine can come. Next only in importance to such considerations of aspect, and certainly important enough to modify them somewhat, is the question of prospect. For a pleasant outlook is a boon only less great than a sunny aspect. We must not ignore a fine view even when it can only be had to the north, and much less must we allow any trivial conventions, like the old commonly accepted idea that the front of the house should be to the road, to betray us into sacrificing such solid advantages as sunshine and a pleasant view. It fact, to produce a good plan, one should go to the site without any preconceived conventions, but with a quite open mind, prepared to think out each fresh problem on the spot from the beginning, and to receive all the suggestions the site can offer. Before leaving the site, one should be able to carry away not only detailed notes of drainage, water supply, levels, fine trees, views and aspect, but also a general idea as to the best arrangement of the rooms of the new house, an ideal plan to be aimed at, and a mental sketch in block of the general form the new creation should take externally. I will now take one or two definite examples of country houses, and explain how and why we worked them out as we did. We have chosen for the first example a country house designed for a site in North Staffordshire, partly because the site was not one to very obviously suggest or very imperatively demand a special treatment. The plot of land consists of a small field, long, and rather narrow; it is much the shape of a suburban building plot, though situated right in the country. The main road runs along the north-east end, and the ground rises on the far side of this road, cutting off all view in that direction. An accommodation road or lane forms the boundary on the north-west side, while the south-east side, as also the south-west end, adjoins agricultural land belonging to a large estate. The ground slopes from the road towards the south-west; the slope being very slight at the top end, and increasing somewhat towards the bottom, suggests a level terrace on which to place the house. The land continues to fall away to a stream which runs in the bottom of a wide and not very deep valley; across this there is a very pleasant view, which becomes more interesting down the valley, and is finest to the south of the plot. The client required the house to have a good comfortable living-room for the general family life; another

good room for entertaining guests and callers; a small den for his own use, with desk, safe, sample cupboards, and gun-rack; four bedrooms, one to be a bed sitting-room for an only son; a kitchen with the usual offices; outside there were to be washhouse, stable, coachhouse, &c. The house was to be arranged to give as much open-air life within as possible. As the site is exposed to the prevailing winds, and the best prospect is in the direction from whence they blow, some form of court on to which the rooms might open suggests itself as a means of obtaining the needful shelter. The stableyard not being very suitable for the purpose, the house is grouped round a very small central court, round which a corridor is planned fitted with sliding windows, so that it can be converted at will into a sort of small open-air cloister by sliding the sashes down below the sill. This is roofed over at as low a level as possible to avoid anything of the feeling of a well. The main roof also is made to slope away from the court in all directions, so that a good deal of sunlight may find its way in. On to this corridor the main rooms open with wide double doors, and the court being protected against wind on all sides it is possible in any weather, except when extremely cold, to have the living rooms open to the fresh air to a quite unusual extent. The kitchen, butler's pantry, front and side entrances, and stairs all communicate with the corridor, but so as not to destroy the privacy of the living rooms by obliging anyone to pass the doors when going from one to the other. Provision is made in one corner for a ventilating stove to prevent excessive cold draughts in winter. The living-room, as the most generally occupied, and therefore most important room, is placed at the south corner, having the double outlook to south-east and south-west, and getting all available sunlight and the best of the prospect. It is not enough to give a room windows in the right direction, however. The room must be so arranged that it shall turn its face right, and the windows be so placed that they shall be naturally seen out from the most usually occupied parts of the room. For this reason an angle window commanding the pick of the view is thrown out on the south-east side. This brings the sun well into the room, and at the same time provides a good well-lighted position for the piano, from whence anyone can easily face to the whole room while singing. For a similar reason the fire is put on the north-east wall, and in a deep recess or angle. To adapt the angle to rooms of moderate size, then, and justify the space it occupies, it must be large enough to be comfortably sat in regularly—a place where one can live, not merely go to be roasted. The fire must be so designed as to have something of the feeling of the old fire on the hearth, and must not be cut off from the recess or in any way allowed to grow into a fireplace within a fireplace. It is generally well to make the whole recess into the hearth, and we often arrange for the fire to burn in a fire-brick hollow, which answers all purposes excellently. Fenders are best avoided, and anything like a loose coal-box is a disadvantage. A coal-box can generally be contrived in the thickness of the wall. The angle must be protected from cross draughts, otherwise the fire cannot be sufficiently exposed. When properly arranged and fitted with comfortable low seats, the angle always proves to be a favourite part of the room. But I am digressing from the plan, and must return to the living-room which we are designing. There the angle is of somewhat special construction, having several small windows to afford peeps out towards the court and the view, and to give light conveniently placed for anyone reading; and also having cupboards for the display of the client's collection of Oriental pottery which is utilised by way of decoration. The angle is made deep enough for the seats to serve for sofas. As meals will be taken in this living-room, a small dais for the purpose is provided in full view of the fire, and the recess for this is made a window recess in the form of a large sunny bay, having fixed seats on three sides of the table. Between the angle window where the piano stands and the angle sea is fixed a cabinet, arranged with cupboards, drawers, and shelves, to hold music, ladies' work materials, books, and other oddments. Near the door a slight recess is formed for a sideboard; and this end of the room is lighted by a window close by, which opens on to the balcony. In all rooms there is a part by the door where no one willingly sits because of a certain lack of comfort; it is well to keep such part of the room as small as possible.

Very often a room may be actually improved by being reduced in width just where the door opens, while the space cut off may be put to much more valuable use. In this case the sheltered south-west balcony, which is obtained by narrowing the two rooms opposite the doors, adds greatly to the amount of open-air life it is possible to enjoy. A recessed balcony is, in our climate, much more useful than any projecting verandah. It is possible, owing to the extra shelter, to sit in such a balcony two or three times as often as in the verandah with open ends. In this room all the important furniture forms part of the scheme; it is thought out and designed with the building. In the treatment of the room advantage is taken of the beams and lintels required for the recesses, and where these are lacking a deep picture rail carrying line with them is adopted, under which the sideboard, cabinet, and windows are arranged to finish, leaving an unbroken frieze above, and giving a sense of order and unity to the whole. This frieze is decorated with a painted suggestion of landscape. The lower portion of the walls, under the decorated frieze, is finished in plaster tinted to the required shade by mixing colouring matter with the skimming coat; this forms a good, plain background for either pictures, furniture, or the people who inhabit the room. Where economy is any consideration, rooms may be kept as low as possible, giving additional space outwards, which is as valuable as space upwards for an air reservoir, and for all other purposes so much more valuable. This house is 9 ft. floor to floor. The hall or entertaining-room being intended for less constant as well as more formal use, takes a somewhat simpler form. Placed at the west corner with windows south-west and north-west, it gets all the sunshine during the afternoon and evening, when it is most occupied. It is immediately accessible from the entrance, and opens on to the balcony with folding-doors and window. The fire is placed in an angle contrived under the stairs and half-landing, an arch being used in this case to carry the chimney-stack and form the recess. The flue from the fire is brought over on to the arch by means of a copper hood. A little bay partly in the porch lights this angle. The porch is also arranged under the stair-landing, with a seat for a messenger under the stairs. A coalbox and shoe cupboard complete the utilisation of the space under the stairs. Adjacent to the entrance is the small sanctum. Here, again, something is taken off the square room, which, while improving it rather than otherwise by giving a recess for desk and pigeon-holes, enables us to have a small vestibule with cupboard for visitors' hats and cloaks. Sample cupboards and safe occupy the south-east wall, while a comfortable corner between fire and window is left clear for easy chair and reading-stand. Handy to the entrance and to this room is the main coat cupboard and the lavatory, from which a side door leads to the stable-yard, while the butler's pantry completes this north-east side of the little court. Beyond this and behind the living-room, having its fireplace at the back of the living-room fireplace, is placed the kitchen. It occupies the east corner of the house, and has its main window to the north-east, the right aspect for a kitchen. There is a small window to the south-east, to light the range and make a comfortable place for sewing or reading. One corner between fire and window should always be kept free from doors in a kitchen, so that there may be a place to sit in, and it makes a more comfortable kitchen still where it is possible to collect the doors on one side only. Here an archway, closed by a heavy curtain when work is done, leads to the scullery, cellar, larder, and back door. A working dresser under the main window, fitted with drawers and flour-bin, a cupboard and plate-rack slightly recessed on the south-east wall, and cupboards each side the fireplace constitute the chief fittings, and in the scullery there is a special cupboard, with slate shelves for saucepans. The larder has its window in the back porch, to get a north aspect, while thorough ventilation is secured by an opening on the south-east up under the eaves where the sun cannot reach it. The cellar was added after the preliminary plans were made, the scullery being rearranged to allow of it. The staircase rises from the corridor, and as it is accessible from all parts without passing the doors of the reception-rooms, a back staircase is not needed. The bedroom plan follows pretty closely the ground plan, the bedrooms also leading off a corridor round the inner court.

All four bedrooms are arranged so that in addition to being convenient as bedroom, they have at least a corner near the fire comfortable to sit in. In small houses to regard a bedroom as a sleeping room only is a mistake. The accommodation is greatly increased when each member of the household can use his or her bedroom as a private den also. The balcony is repeated on the first floor—the bedrooms being as serviceable without the space it occupies—and, by reason of the parapet and over-hanging eaves, it is even more sheltered than that on the ground floor, and makes it possible in two bedrooms to sleep practically in the open air in almost all weathers. It has special value, too, as an addition to the west room, which is designed for the boy's bedroom and study. Here the bed fits in a deep recess out of the way; a washstand is contrived in the sill of the window of the same recess, which is slightly bayed to give the needful room, and a curtain may be drawn across, cutting off all the special bedroom appliances, so leaving a comfortable study. The central court enables the corridor to have opening windows to three aspects, so that some can be open whatever the direction of the wind; it also makes it possible to cut off the bathroom, housemaid's closet, and w.c. by means of a lobby having two little windows on to the court. A window is put to bring the south-east sun into bedroom No. 3, the wide sill of which in the rather narrow room may be used for a dressing-table. As this chamber is specially well placed for being isolated in case of sickness, it is supplied with a hob-grate. In bedroom No. 4 an over-hanging window recess is carried out on the joists, to avoid the want of comfort which one always feels on the window side of a room when the door opens on to it right in the corner, as here; while the window itself is slightly bayed to add to the outlook. This room has also a little window on to the court to bring in morning sun. Thus all the bedrooms get through ventilation and plenty of sunshine. Of the treatment of the rooms little need be said. The recesses by the chimney breasts are fitted with cupboards and bookshelves, which are designed to include simple framings or mantels for the fireplaces, and the cornices of which are arranged to match the cornice over doors and windows and to carry line with a picture-rail running round the room. Wall-papers or other decorations stop at this rail, all above being taken in with the ceiling. This arrangement enables the ceiling to be broken up with the slopes of the low roofs without giving ugly odds and ends of papered wall. During the whole of the planning the elevations are of course kept in view, and the block design carried away in the mind from the site constantly exerts a modifying influence. The difficulty usually is to maintain sufficient simplicity; so many features are suggested by little conveniences of planning that one has often to cut them out, not to seek for them merely for the sake of effect. This plan which we have just considered, representing, perhaps, rather a large house to be classed as "small," does not quite illustrate one point to which we attach very great importance in the designing of small houses. A second plan gives an opportunity of referring to this. Here a special effort was made to obtain one room giving some sense of space in a house not extensive enough to contain several large rooms. In all small houses much must be sacrificed, but it seems to us to be infinitely less of a sacrifice to reduce the number of rooms than it is to reduce the size of them all until they are mere boxes. In this second plan the hall is made into the chief living-room; it is carried up two stories to allow of an organ gallery. The gallery leading to the balcony, the landing, and the staircase, are all thrown into this hall, the stairs being so arranged as to afford a screen to the fire, forming a sort of deep angle with low ceiling under the landing. The low ceiling continues under the organ gallery and the balcony, the central part of the hall being open to the full height. In the gallery is a second fire with a lounge seat by the organ under a canopy formed by the half-landing of the second-floor stairs. To obtain this spacious hall the remainder of the house has been reduced as much as possible. Only one other small room, for den or meal-room, is provided, with kitchens, offices, and four bedrooms, two of which are on the second floor. I will next refer to a design drawn for a London literary man, who, though not able to afford a large house, still by reason of his position required occasionally to be

able to entertain a good deal of society. Here the first consideration has been to obtain a hall which would be at once a comfortable living-room and a dignified entertaining-room. The meal-room has been kept as small as would just allow of a little dinner-party being given in it. The fire is placed in one corner, the sideboard in another; had it been possible to put the door also in a corner it would have been still more convenient, for in a small dining-room it is in the corners that there is a little space to spare. The narrow Hampstead building plot, having a south-west aspect, and the best prospect to the south, dictated the general arrangement of the house and the placing of the best room at the south corner. This room is spanned by two arches to carry the wall of the study over. Within one of them is placed the fire recess with seats and fittment, thus using up all the space under the stairs to add to the size and character of the room, while the stairs themselves, which are shut off from the vestibule by a door, are also open to the room, the quarter landing forming a small gallery overlooking it. The staircase is such an essentially interesting and decorative feature in a house, that it always seems a pity to shut it off in a mere passage, and the space under and around it may be made to add so much to a room both in size and individuality. Over the hall in this house are placed the client's study and bedroom, the two being combined that both may have the benefit of the whole air space, book-cases, and curtains screening off the bedroom portion. Double doors and double windows are fitted to this room, for perfect quiet both by day and by night is essential, and further, to secure this, ventilation is obtained by means of two fireplaces and an air-shaft built in one of the stacks. The elevations are somewhat more elaborate and fussy than we should make them now. One gets tired of seeing half-timber stuck about in all sorts of positions, and disinclined to use it even when, as here, some such construction is rather demanded by the roofing. But I must pass on now to cottages, the second part of our subject. The distinction between a small house and a cottage, never a very clear one, has been further obscured by a common affectation of simplicity, and for our purposes I propose to regard as a cottage any house in which separate accommodation is not provided for servants. To cottages, then, all that has been said about the advantage of securing a good living-room, even at a great sacrifice of other conveniences, applies with additional force. For not only is the total space at our command usually less, but the number of functions which the living-room has to provide for is greater, many of the functions of a kitchen being added to it. To combine the comfort of a living-room with the convenience for work of a kitchen will tax our skill in planning. Let us again proceed by way of example, taking a largish cottage designed for a client who wished to live a quite simple life, yet on a scale that would allow of his enjoying the more necessary comforts and refinements. The site is near a small Derbyshire town, and consists of a mound caused by the outcrop of some shale grit. On the north runs a stream, down to which the ground falls precipitously; the road is to the west, and there is a steep fall here also; to the east the fall is slight, while to the south the ground rises gently. There are fine views in all directions—most interesting to the north, least so to the south. The client desired the main windows of the living-room to the west, having a special liking for the evening light. The site seemed to demand a simple oblong house with plain span-roof kept as low as possible, forming a sort of ridge on the steep-sided mound. The western end of the building naturally becomes the living-room. There is a window to the north to command the best of the view. A window on the south side admits plenty of sun, and in addition on this side there is the outer door, placed there that it may be possible to enjoy the charm which a door opening direct from a room on to a sunny garden always gives. Such a door must, however, be so placed that while the peep out is obtained the comfort of the room is not destroyed. Here we have gathered the two doors and the stair-foot together in a narrow part of the room out of the way, leaving all the rest of the space comfortably to occupy. The fire is placed on the north wall, in a deep recess, one side being devoted to rest, the other to work. The former is occupied by a comfortable low seat; the latter is devoted to a working dresser, fitted with a small fixed bowl for washing up

glass and china, drawers, cupboards, and plate-rack. To save constant running to and from the scullery, a small hatch closed with a shutter is arranged to open on to a wide enamelled shelf, so that saucepans and such like can be handed through. All the kitchen work done in the living-room is thus confined to the one corner handy to the fire for cooking, and well lighted by the north window. The fire is designed to make either a closed cooking-stove or a comfortable open fire to sit round, as required. Unfortunately it has to be set in a chimney-breast; but by filling the recesses each side with cupboards, bookshelves, and coal-box, and not carrying the seat beyond the face of the breast, part of the effect of this is removed, and some, at any rate, of the charm of an angle is secured. The floor of the recess is tiled, too. The angle is further defined by an archway, on one side of which is fitted a writing desk with closing flap, drawers, and bookshelves, and on the other the piano is designed to stand, occupying part of the space under the rising stairs, the remaining portion being taken up with music cupboard and bookshelves opening into the living-room, and a store cupboard opening into the kitchen. A second lounging place is provided by a wide, low window-seat in the main window, and between that and the meal table is fitted a small side table with cupboards and shelves to hold the oddments used at the table. Fixed seats are arranged for two sides of this table, one having a high back to screen it from any draught coming through the outer door. To this one good room is added a kitchen for the more dirty work, fitted with a small range, a cupboard for coats and hats by the entrance, a coal-place and larder. Upstairs are four bedrooms; one, being rather narrow, has a bed-recess taken off the larger room to help it, and as it is over the low ceiling of the angle it gets the advantage of extra height under the sloping roof, and thus the low ceiling, which adds so much to the feeling of cosiness in an angle, is made to help the bedroom over. Where some such arrangement as this is not possible, we sometimes utilise the space between the low ceiling and the floor above as a storage cupboard, and we often take advantage of it for ventilating purposes, by bringing fresh air into the room, slightly warmed by passing behind the fire, and delivering it over the opening to the recess, where it is distributed with the least possible draught. Where an outlet into a flue is desirable to supplement the exhaust due to the fire, we find this is a very good place to arrange it. In a room with close-fitting iron casements, sufficiently well built not to leak excessively through floors, skirting, and door, the most frequent cause of a smoky chimney is the want of sufficient air supply, and some form of inlet is an absolute necessity. In bedrooms we have successfully arranged this through a hollow fender kerb in some places. All the bedrooms in this cottage are so arranged as to have a fairly comfortable corner between the fire and a window, where one can sit to read or write. An east aspect is obtained for the bathroom, and a linen cupboard warmed by the cylinder is provided. In the elevations local random range stone is used for the ground story, while for the upper portion the need for obtaining four bedrooms over a house so narrow required the use of 9 in. brick walls which are rough cast in cement. To avoid the expense of dressed stone, and also to connect a little the two stories, all the windows have brick jambs and mullions, and the rough-cast is carried down over them. The roof is covered with local stone slate. I hope I have made it clear that, whatever the size of the house, it should grow, both as a utilitarian plan and as an artistic creation, out of the real needs of the occupants; and that the art of designing small houses and cottages consists, not in following any accepted code of conventions, however useful these may be in their place, but in working out such a convenient and comely setting for the special life that shall be lived in them as shall enable that life to expand itself to the fullest extent, not merely unhampered by the building in which it is clothed, but actually stimulated by a congenial surrounding.

[As it is not possible for us to reproduce all the illustrations which accompanied this paper, it may interest our readers to know that we understand most of them will be included in a volume of lectures by the authors, which is about to be issued by Messrs. Longmans, Green, and Co.]

Two additional theatres are to be erected in Glasgow by Howard and Wyndham, Limited.

VALUATIONS AND COMPENSATIONS. IX.

METHOD OF MAKING CLAIM—FORM USED BY LONDON
COUNTY COUNCIL—HOW TO FILL IT.

METHOD OF MAKING A CLAIM.—Assuming now you have received the notice to treat, which is usually accompanied by a blank form of claim, the first point will be to carefully fill in that form. For the guidance of our readers, and that we may make these articles most practical, we give as an illustration the form now being used by the London County Council.

It is almost unnecessary to state that if the declaration be made corruptly, or, being made, the surveyor acts contrary thereto, he is guilty of a misdemeanour.

It has been held that if a surveyor does not enter the building he has to value it is not a proper valuation.

The "nomination" of the surveyor or arbitrator and the declaration must be annexed to the valuation. For form of this see appendix.

All the expenses incident to the valuation must be borne by the "takers" under the compulsory powers. *Severance* damages are to be included in the valuation.

FORM OF CLAIM.

To be filled up and signed by the owners of, and other persons interested in, or having claims upon, property required for the purposes of the said Acts and scheme:—

Name, residence, business, or description of claimants.	Description of property.	No. on plan referred to in the request to deliver claim.	Register No. in book of reference.	Street or place where situated.	Interest claimed, whether Freehold, Copyhold, or Leasehold, with full particulars of same. If Copyhold, state the amount of quit rent, whether the fine is certain or arbitrary, and the amount thereof; also the age of the Copyhold tenant. If Leasehold, state term of Lease and amount of rent. If the Lease includes property not comprised in the claim, state what apportionment of rent is proposed.	Name of occupiers, and whether yearly or otherwise, and rent paid, and unexpired term of lease (if any), and date of commencement of yearly tenancy.	Amount of, and particulars as to, compensation required.
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N.B.—To be delivered at the Solicitor's office
London County Council, Spring Gardens.

Signature of Claimant.
Date.
Name and address of Claimant's Solicitor.
Name and address of Claimant's Surveyor.

The particulars to be filled in in the first column require no remark. Those in the second may be obtained from the schedule appended to the Notice to Treat. It will be wise, however, to see the plan, which must, according to the Act, be deposited with the Clerk of the Peace for the county, so that any error in the schedule may be detected. The filling in of the first five columns will not present any difficulties. The sixth may somewhat trouble you; but any difficulties it may present will, we think, be readily surmounted if you have carefully perused the foregoing chapters. Great care is necessary in filling in column 7, as the information cannot be legally demanded, and may in some cases be prejudicial. The last column explains itself, and of the method of arriving at the amount of each item of claim we next propose to treat.

X.

METHODS OF SETTLEMENT OF CLAIM—SURVEYORS—JUSTICES—ARBITRATORS—JURIES—DECLARATION—FORM OF SAME—CONSEQUENCE OF CORRUPT DECLARATION—SEVERANCE VALUATION—NOMINATION—LIMIT OF JUSTICES' JURISDICTION—NOTICE OF ELECTION BETWEEN ARBITRATION AND JURY—APPORTIONMENT—RENTS—ADVANTAGES OF JURY—ADVANTAGES OF ARBITRATION—DISADVANTAGES—Q.C. AND THE WITNESS—A JURY METHOD OF ARRIVING AT VERDICT—DESCENDING VIEW—INSTANCE OF "FRONTAGE"—FRONTAGE AND BACK LAND—GRADATION AS TO TITLE—EXAMPLE OF HOW A VALUATION SHOULD BE SET OUT FOR A BLOCK OF PROPERTY.

TRIAL OF CLAIMS.

Having now conducted our readers through the consideration of each phase of the claim, the next matters for our attention are the methods by which that claim is to be settled and adjusted. Supposing that the amount of the claim differs so far from that which the agents of the company consider adequate that no arrangement can be arrived at, what are the tribunals to which the question may be referred?

We have already stated that there are four methods:—1st, surveyors; 2nd, justices; 3rd, arbitrators; 4th, juries.

With regard to the first of these methods we will call attention to a matter of formality which is of importance. The valuation made by two surveyors appointed, one on each side, or the umpire,

II. THE SURVEYORS' DISAGREEMENT.

will not be valid unless there is attached to the award or valuation a "declaration" of its accuracy. The surveyors must therefore make an award, and then sign a certificate that the amount they have awarded is sufficient. It may be as well that we should here give the form of declaration usually employed.

FORM.

I, A. B., do solemnly and sincerely declare that I will faithfully, impartially, and honestly according to the best of my skill and ability, execute the duty of making the valuation hereby referred to me.
Made and subscribed. A. B.
(Date.)

Justices.—The jurisdiction of justices is limited to cases where the claim does not exceed £50, and to cases where the claimant has no greater interest than that of a tenant from year to year.

The justices are, in addition to the value of the land taken, to value the damage arising from "severance"; but they may assess the severance claim and compensation in one sum.

It is held that though a written agreement may be void at law (as, for example, an agreement for a term of five years, which should be under seal), still, as in equity it is equivalent to a lease, it cannot be taken before two justices, the interest being greater than that of a tenant from year to year.

Apportionment of Rent.—Two justices have the power to apportion the rent in the case of lands charged with a rent-charge, when part only is required, and the parties cannot agree.

Arbitrators and Juries.—If the amount claimed exceeds £50 the owner may elect whether, in case the company refuse to pay his claim, he shall go to a jury, or have the amount assessed by arbitration. He must give notice to the company of his determination. Now, as to the methods. Your client is sure to consult you, and you will have to give him the benefit of your experience. Which would you advise—arbitration or a jury? To enable you to come to a right decision, we will give you the leading points of each method.

Advantages of a Jury.—If you go to a jury, the advantages are:—

1. Within twenty-one days the company are bound to have it summoned after you notify your desire.
2. The decision will be arrived at on the day of trial.
3. The verdict will be given the same day.
4. Your client will often be better pleased with the formality of the jury going to view, and the decision of a number of men, rather than that of one skilled man.

Advantages of Arbitration.—What, then, are the advantages of going to arbitration? may fairly be asked, the disadvantages being so many—namely, it is slower in obtaining a commencement of the proceedings; the process, when commenced, is much more tardy; the decision is often not known for weeks after the final sitting. Well, the advantages sometimes more than counterbalance all the disadvantages.

1. You are less liable to a "surprise."
2. You are more certain to get about the proper amount.
3. In many cases the "view" of unskilled men would be prejudicial to your client.

Surprises.—First, as to "surprises." Anyone who has had much experience with jury cases

will at once remember instances in which, though he had his plans and calculations well prepared, and his "confirming" surveyors all ready; their reports in the hands of solicitors; the private view with counsel passed, and the result all he could wish; the final consultation over, and the day arrived—some awkward and unexpected evidence as to the value of adjoining land spreads dismay amongst his "team." Builders, perhaps, brought up to say what they sold it for a few months before; evidence as to bad foundations which exist only in imagination; as to bad drainage, having a like foundation; also as to the amount that adjoining houses have recently sold for. There is no time to bring up counter evidence to disprove all these points when the case is before a jury, but when before an arbitrator there is plenty, as at the next sitting evidence can be tendered.

While treating on the subject of surprises, an incident occurs to us. In a case, our client thought to strengthen the evidence by having a local surveyor who knew all about the land. In the "box" he had given his evidence more than supporting my view of value. When an eminent Q.C. rose to cross-examine him, his first question did not appear at all out of the common. It was, "I suppose you have not always considered land in this locality of this large value?" The answer was, of course, it had increased in value. Q. Since last evening? A. No. (a puzzled sort of "No," as if the witness could not see the drift of the question). Q. You may say "No," but what did you tell someone you met on the land last evening? Did you not tell him that the land for the workhouse was sold twelve months ago for £500 an acre? And now you are asking £1,000 for this land? A. I don't remember saying that. I do remember an inquisitive old fellow asking me a lot of questions about the land, and as he was chatty and pleasant I told him a good deal. The leading silk: Yes; and I suppose you don't know that that inquisitive old fellow was myself? but I will remove my wig to help you. Smiting the action to the word, he did so, much to the visible astonishment of the witness.

This is only one instance of an unpleasant surprise. On this ground arbitration has the advantage; but whether it is sufficient to outweigh the advantages offered by the jury system we leave our readers to decide for themselves.

As to the second consideration, the process does seem really sometimes to obtain amongst juries of adding up all the amounts of the surveyors on both sides, and dividing the total by their number; so that we think we may say that the result arrived at is less certain than where you have a skilled arbitrator who weighs all that is said, and tries to arrive at the real value. As to the third reason, no remarks are necessary, except to advise our readers that the class of property to which we there allude is where much dilapidation has been allowed to accrue. There the jury are likely to take a desponding view of the value, although all the dilapidations may have arisen since the time when the owner could legally repair.

Juries.—As an example of the way in which the jury system sometimes works we will instance the following:—

A parish wanted a new workhouse, and required five acres of land, and at a meeting fixed the price they would pay per acre, and determined they would go in any out-of-the-way part of the district rather than exceed that price. A certain owner, being poor, and having a quantity of land without frontages, agreed to sell to them at that price. The land was sold, and the parish had frontage to the main road and to two other roads, and was therefore of an entirely different character, yet the evidence unexplained damaged our claim. The jury would not recognise that five acres taken from a limited area must enhance the value of the remainder, nor could they appreciate the difference of value of frontage land and back land, to which special approaches had to be made.

In defence of the jury method, I would say that the difficulty of deciding where skilled or technical witnesses so much differ is extremely great.

Title.—It should be noted that neither juries nor arbitrators have any jurisdiction as to "title."

We will now give an example of how a valuation claim for a block of property may be arrived at:—

The accompanying plan represents property in a provincial town adjoining a railway. The railway company have acquired powers to construct a branch line (as shown by dotted lines), and will build their station on the triangular portion of land lying between the new branch, the existing line, and the High-street. In the powers obtained by the company is a clause requiring them to purchase the land for and to lay out the road, shown by the dotted lines, south of the new line, and leading from High-street to Seaforth-street. Bridges are to be constructed

Nos. 31, 32, 33, and 34:—

Table 4 for perp.	125 0 0
10 forced sale	125 0 0
No. 39	
54ft. frontage at 7s. say	£19 0 0
Table 5 for perp.	20 0 0
10 forced sale	20 0 0

Nos. 40, 41, 42, and 62:—

Nos. 40, 41, and 42. land only, 146ft. frontage at 7s. a foot	£31 0 0
No. 62, land only, say	3 0 0
c.r. of land secured by buildings	54 7 6
Table 4 for perp.	20 0 0
Value of buildings	755 0 0
10 forced sale	735 0 0

Freeholder's trade claim:—

£1,000 0 0 trade profits	2 1 1
Loss on machinery	175 0 0
	£3,750 0 0

No. 43:—

Rights of way	£8 0 0 rent
Ditto to No. 62	2 0 0 rent
Table 5 for perp.	20 0 0
10 forced sale	200 0 0

No. 44:—

£300 0 0 rent	7 722 y.p.
Table 5 for 10 years	2316 0 0
Annual value of premium (on 6 table)	100 0 0
7 35	196 0 0
5% for perp. deferred	436 0 0 rent
10 years, 20 - 7 722	12 278 y.p.
10 forced sale	7 722
	£8,436 0 0

Brewers' profit..... £300 0 0 p.a.

Say 4 1,000 0 0

Nos. 45-48:—

£226 0 0 rent	20 y.p.
Table 5 for perp.	652 0 0
10 forced sale	652 0 0

Nos. 49 and 61:—

Making good to party-walls.....	55 0 0
Total compensation to freeholders.....	£42,244 0 0

LEASEHOLDERS' AND OCCUPIERS' CLAIMS.

No. 13:—

£50 0 0 trade profits	2 y.p.
Cost of removal	£16 10 0
Loss on fittings	5 0
Allow for cancelling agreement	15 0
	19 0 0

No. 14:—

£300 0 0 trade profits	4 y.p.
Cost of removal	1200 0
Fittings	50 0
£55 0 0 profit rental	75 0
Table 6 for 15 years	9 712 y.p.
10 forced sale	9 712
	£2,213 0 0

Nos. 15, 16, 17, 18, 19, 20:—

See freeholder's claim	£108 16 0 income
	80 0 head rent
	25 16 0

Table 6 for seven years	5 582 y.p.
10 forced sale	157 0
	16 0

Less present value of dilaps. 150 - 651	99 76
(6% table, page 98, Inwood)	73

No. 21:—

£15 0 0 profit rental	10 16 y.p.
Table 6 for 16 years	151 59
10 forced sale	15 15
£30 0 0 trade profits	21 0 0
Cost of removal	75 0
Loss on sale of stock	20 0
Ditto fittings	75
	£2,720 0 0

party-walls of 49 and 61 will require making good, at an estimated cost of £30 and £25 respectively.

NOTE.—Land in High-street, if uncovered with buildings, is estimated upon recent experience to be worth for ground rents 15s. per foot frontage, and in the back streets to be worth 7s. per foot.

We will now give one way of valuing the cost of purchasing the above property, and of the compensation to be paid to the various freeholders, leaseholders, and occupiers:—

FREEHOLDER'S CLAIM.

Nos. 1-12:—	£218 8 p.a.	£ s. d.
12 cottages at 7s.	109 8	
Outgoings (see Chap. IV.)	109	
Net rent	16 667 y.p.	
Table 6 for perp.	1 17 0	
10 forced sale	1 82 0	£1,999 0 0

No. 13:—

£30 p.a.	3 0
Outgoings (see Chap. IV.)	27 0
Table 5 for perp.	20 y.p.
10 forced sale	540 0
	594 0 0

No. 14:—

£20 p.a.	5 076 y.p.
Table 5 for 6 years	304 5
Reversion to rent	60 0
Plus annual value of premium (6 Table for 21 years)	11 764
Estimated rack rent	145 0
5 for	5 0
Deferred perp. 20	108 16 0
5 years, 5 for	14 924 y.p.
6 years, 5 (76)	2163 9
10 forced sale	2468 4
	2470 0
	£2,715 0 0

Nos. 15, 16, 17, 18, 19, and 20:—

£90 p.a.	5 783
Table 5 for 7 years	462 88
Reversion to	£241 16 0
Outgoings (see Chap. IV.)	133 0 0
5% for perp.	20 0
5 for 7 years	5 786
	14 214 y.p.
	1546 48
10 forced sale	200 0
	£2,210 0 0

No. 21:—

£60 p.a.	10 838 y.p.
Table 5 for 16 years	650 28
Reversion to	75 0
5% for perp. deferred 16 years (20 - 10 832)	9 162 y.p.
	657 15
10 forced sale	1337 43
	1337 74
	£1,471 0 0

Nos. 22-23:—

£130 0 0	14 7 6
Outgoings see Chap. IV.)	115 12 6
Table 5 for perp.	20 y.p.
10 forced sale	2412 5
	2415 0
	£2,740 0 0

over Baker-street and High-street. The particulars of the property are as follows:—

Nos. 1-12.—Freehold cottages let at average rents of 7s. per week. They let readily to employees at local factory, but are fifty years old, and in bad repair.

No. 13 is a greengrocer's shop, in good repair, let on a three-years' agreement at £30 per annum, and the fittings are worth £20.

No. 14 is a public-house, let on a 21-years lease (six years now unexpired) at a yearly rent of £87. Average net profits from the trade certified at £300 per annum. The fittings are valued at £150. The house is free, and occupied by the lessee. Fifteen years ago the latter paid a premium of £1,000.

Nos. 15, 16, 17, 18, 19, and 20 are let out as workmen's dwellings. They consist of three floors, the ground floor letting at 6s. 6d. per week, the first floor at 5s., and the second floor at 4s. They are well built, but some loss is experienced through empties and bad debts. The whole six are leased (seven years unexpired) at £30 per annum, and the lessee sublets. The freeholder at expiration of lease would probably be able to sustain a claim for dilapidation to the extent of £25 per house.

No. 21 is a grocer's shop in good repair, let on lease (sixteen years unexpired) at £60; present value, £75 per annum. Lessee lives over the shop, and his certified net profits are £300 per annum. His stock is valued at £100, and his fittings at £100.

Nos. 22 and 23 are shops in good repair, each just let on a three-years agreement at £65. No. 22 is occupied by a jeweller, who lives over the premises, and whose certified net profits are £200, his stock is worth £500, and his fittings £200. No. 23 is occupied by a tailor, whose net profits are £150, his stock is worth £100, and fittings £100. He sublets the upper part for £30, and pays all rates and taxes.

Nos. 24-30 are not required by the company.

Nos. 31, 32, 33, and 34 consist of a builder's yard and workshops, held by the builder at a ground rent of £50, the lease having 60 years unexpired. The building numbered 31 was erected by the lessee 20 years ago at a cost of £1,000, and contains machinery and plant worth £500. Those numbered 33 and 34 were erected at the same time at a cost of £300, and contain machinery and plant worth £150. All the buildings are of brick, and well built. The yard numbered 32 contains stock and plant worth £300. The goodwill of the builder's business as carried on at his premises is worth £1,000.

No. 35 is a vacant plot of land unlet.

Nos. 40, 41, 42, and 62 consist of yard, warehouses, and office occupied by the freeholder, who is a mineral-water manufacturer, and who built the premises ten years ago at a cost of £6,000. The plant and machinery are together valued at £3,500. The net profits are £1,000 per annum.

No. 43 is a private roadway, owned in fee simple by the mineral-water manufacturer, and used by him for access to his buildings. Rights of way are allowed over this to the occupiers of Nos. 46, 47, 48, and 52 at a yearly rent of £2.

No. 44 is a fully licensed public-house, the freeholders being a firm of brewers who have just leased the premises as a tied house to the occupier at £300 per annum, with a premium on a 10-years lease of £1,000. The annual net profits have been certified to the lessee at £400; the net profits of the brewers on the sale of their liquor is £300. The premises are well built and in good repair. The original cost was £2,500; the fittings are worth £400, and the stock in hand £400.

Nos. 45, 46, 47, and 49 are shops in fair repair, let on lease, having 21 years unexpired, at £50 per annum each. Nos. 46, 47, and 48 have back entrance, for which each lessee pays £2 per annum. All are occupied by the lessees, whose trade and profits, &c., are as follows:—

No.	Trade.	Net profits.	Value of Stock.	Fittings.
45.	Dining-rooms	£300	—	£200
46.	Dairy	350	—	300
47.	Chemist	300	300	300
48.	Stationer	250	350	150

Nos. 49-51 are not required by the company, but after the adjoining buildings are pulled down, the

Nos. 22 and 23. —

No. 22. — £225 0 Trade	
Damage to stock	400 0
Ditto fittings	100 0
Cost of removal	150 0
Cancelling agreement, Y.P.	33 0
	583 0 0

No. 23. — £15 0 Trade

Damage to stock	225 0
Ditto fittings	150 0
Cost of removal	100 0
Cancelling agreement	33 0
	358 0 0

Cost of removal to tailor's tenant

10 0 0

Nos. 1, 32, 33, and 34. —

Other suitable premises in vicinity, say, 1 Y.P.	£1,000 goodwill	500 0 0
No. 32. — £100 0 value of Bldgs.		
Buildings	1300 0	
Loss on sale of stock	130 0	
Loss on machinery and stock and plant	475 0	1,905 0 0

No. 44. —

Premium paid for lease £1,000 0	
1 per cent forced sale	100 0
£400 0 Trade	
Loss on sale of fittings	3 0 0
Ditto on stock	10 0 0
Cost of removal	50 0
	2,750 0 0

Nos. 45, 46, 47, and 48. —

No. 45. — £300 0 Trade	
Loss on sale of fittings	600 0
Cost of removal	150 0
	770 0 0

No. 46. — £350 0 Trade

Loss on sale of fittings	£ 50 0
Cost of removal	40 0
	410 0 0

No. 47. — £300 0 Trade

Loss on sale of fittings	200 0
Ditto on stock	90 0
Cost of removal	25 0
	915 0 0

No. 48. — £250 0 Trade

Loss on sale of fittings	£500 0
Ditto on stock	180 0
Cost of removal	20 0
	800 0 0

Total compensation to lessees, occupiers, and for trade claims	£12,584 0 0
Add freeholder's claims	£2,244 0 0
Total	£14,828 0 0

BRITISH AND IRISH BUILDING STONES. — XX.

TUFA, a light, porous vesicular limestone, occurs along the foot of the Tabular Hills, the principal deposits being at Kewick, Newton-dale, Saltergate, in Troutdale, and the upper part of the Forge Valley. This stone was much used by Medieval builders for filling the spandrels of their groined ceilings, on account of the lightness of the material, and the facility with which it was worked. The Upper Lias seen in Robin Hood's Bay and Rockcliff, consists of alum shales with cement nodules, pyritic shales with jet (a resinous variety of lignite derived from coniferous wood), and a grey, compact, micaceous sandy shale. The beds furnish hydraulic limestone, but no building stone. The Middle Lias, the equivalent of the Banbury Marlstone, consists of ironstone beds, overlying sandstone shales and clay ironstones. The Cleveland iron ore, a greenish grey oolitic carbonate of iron, is dug from the upper beds of this series, where they are developed in the Cleveland Hills east of Northallerton. The Lower Lias is seen in places on the coast in Robin Hood's Bay, near Market Weighton and Redcar. The beds consist of shales and clays with thin bands of impure shelly limestone. Though the Yorkshire Lias attains a thickness of about 1,300ft., and forms part of the Vales of York and Cleveland, as well as the slopes of the oolitic Moorland hills, it nowhere furnishes a building stone. The Rhaetic beds are shales and sands, about 15ft. thick, which rest on sea-green marls 10ft. thick. They may be seen at Lazenby, Stokesley, Lonsdale, and east of Northallerton. They yield no building stone. Keuper Marls form the east side of the vale of York, and Bunter Marls the western side. Both are covered by deposits of clay and gravel, 60ft. thick and over, of Glacial age. These red rocks are therefore not seen at the surface. At Middlesbrough a boring showed 58ft. of Glacial drift, 8ft. of red marls

and clays, 1,067ft. of white and red sandstone with gypsum, and 100ft. of rock salt. The boring stopped here, not having penetrated to the full depth of the salt! The Permian Rocks form a band extending from Durham to Catterick, Bedale, Masham, Ripon, Knaresborough, Tadcaster, Pontefract, and Tickhill to Work-sop in Nottinghamshire. In the south of this county the beds are divided as follows:— (1) Upper Marls and Sandstones with Gypsum, west of Doncaster; (2) Upper Magnesian Limestone, thin flaggy Limestone, Red Marl, and Gypsum, of Brotherton, Knottingley, Womersley, Hexthorpe, Wadworth, Tickhill, &c.; (3) Middle Marls and Sandstones, with Gypsum, north of the Wharfe; (4) Middle Magnesian Limestone, of Roche Abbey, &c.; (5) Lower Magnesian Limestone, of Pontefract, Emsall, Brodsworth, Conisborough, and Crakehall, near Bedale. The Magnesian Limestone furnishes one of the best building stones in England. Some of the principal quarries are Warmworth Cliffs, Doncaster, Messrs. Lockwood, Blagden, and Crawshaw; Bracken Hill, Ackworth, Messrs. S. Seal and Sons; Micklefield, the Micklefield Coal and Lime Co., Kiveton Park, Messrs. J. Turner and Son; South Elmsall, Mr. J. Hinchcliffe; South Milford, Newthorpe, the Garforth Colliery; Weldon Wood, Castleford, Messrs. J. Crowther and Son; New Fryston, Castleford, Mr. W. Brook; Cridling Stubbs, Mr. G. A. Ingle; Anston, Mr. J. Turner; Anston, Messrs. Lockwood, Blagden, and Crawshaw; Bramham Moor, Mr. S. Smith; Cadeby, the Denaby and Cadeby Collieries, Ltd.; Hickling, Horton Pagnell, Mrs. Warde-Aldam; Hill Top, Knottingley, Mr. E. Wood; Steels, Knottingley, Mr. R. Rhodes; Town, Knaresborough, Mr. Watkinson; Womersley, Pontefract, Mr. Iscott; Monkton Moor, Ripon, Messrs. W. Pepper and Co. Many of these quarries are worked chiefly for lime-building. The principal building-stone quarries are Anston, Brodsworth, Cadeby, Conisborough, Huddlestons, Jackdaw Crag, Roche Abbey, and Smause. The Anston stone was used in Jermyn Street Museum and the Westminster Houses of Parliament; Brodsworth was used in Doncaster Old Church and the Mansion House; Cadeby in the Almshouses at Edgware; Conisborough in the town of Doncaster generally; Huddlestons, in Westminster Hall and the Houses of Parliament; Jackdaw Crag, York Minster in parts; Roche Abbey, in Tickhill Church and Castle, Selby Hall, Blythe, Bawtry, and many old churches in Yorks and Smause, in Beverley Minster restoration, St. Mary's, Beverley, and old churches in Hull. Mr. Gayfer, the Abbey mason, stated that Huddlestons magnesian limestone was used in the flying buttresses to Henry VIIIth's Chapel, Westminster. The Coal Measures extend south from Leeds into Derbyshire. They are divided into upper red beds near Rotherham, chiefly coarse reddish sandstones, 54ft. thick; middle sandstones, shales, clays, ironstone, and coal, 2,000ft. to 3,000ft. thick; and Lower or Gannister beds, 900ft. to 1,000ft. thick. Sometimes the Coal Measures are grouped as the Ardwick stage, Pennant stage, and Gannister stage, on lithological grounds. The Carboniferous rocks of this county have furnished the "York" paving, steps, and landings of almost all the bills of quantities and specifications written in London for the past 50 years;—not that the writers of these had much or any knowledge of the nature of the stone they were specifying; but the expression "York stone," covering as it did all the flagstone quarried in the county, saved much time and trouble in looking for any particular quarry where good stone might be obtained. It would be impossible within the limits of such an article as this to enumerate all the building stone quarries and mines in this county, for there are workings underground as well as open quarries, so that only the most important shall be mentioned here. In the neighbourhood of Morley there are Great Finsdale, worked by the Henley Park Co-operative Quarry and Building Society, Limited; Robin Hood, Messrs. Pawson Bros.; Britannia, Messrs. Pawson Bros.; Britannia, Exors. of Mr. T. Denton; Finsdale, Messrs. J. Akeroyd and Sons; Morley Stone, Messrs. J. Akeroyd and Sons; Howley Park, Messrs. Pawson Bros.; ditto, Messrs. J. Akeroyd and Sons; ditto, Mr. T. Clough, near Bradford; Spinkwell, Messrs. Moulsons and Mellors; ditto, Messrs. Dyson and Jetty; Bolton Wood, Messrs. E. Wood and Co.; ditto, Messrs. Reddough and Sons; ditto, Mr. C. Waterhouse; Weatheroyd Wood, Mr. E.

Dyson; Bolton Woods, Messrs. E. Wood and Co.; ditto, Messrs. Reddough and Sons; ditto Mr. C. Waterhouse; Buck Park, Messrs. Lodge and Fleisher; Manual, Mr. J. Clayton; Fall Top, Mr. C. Shepherd; Ell Cliffe, Messrs. J. Crossley and T. Scarbrough; Dalph Lane, Messrs. Ingham and Storey. Near Southowram: Milking Hill, Messrs. Marshall and Greenwood; ditto, Messrs. Smith and Greenwood; New Farm, Mr. H. H. Jennings; Pinnerham, Mr. S. Greenwood's Exors.; Cross Platts, Messrs. Hartley and Kaye; Grange House, Messrs. J. Charnock and Sons; Field House, Messrs. J. Charnock and Sons. Near Northowram: Swale Moor, Messrs. Sidney Smith and Son; ditto, Messrs. B. Riley and Sons; ditto, Messrs. J. Charnock and Sons; Slack End, Messrs. S. Eastwood and Sons; Broomfield, Mr. G. W. Nelson; Northowram Hills, Messrs. Brearley and Gelder, near Idle; Black Dyke, Messrs. J. Farrar and Sons, Ltd.; Abbey, Messrs. Vint Bros.; Blaze Hill, Mr. F. A. Laycock, near Sheffield; "Victoria," Greenmoor, Mr. B. B. Booth; Handsworth, Mr. J. C. Stott; Lowwoods, Deepcar, Messrs. J. G. Lockwood and Co.; Haggy Stone, Worrall, Mr. J. Turner; Fox Hill, Wadsley Bridge, Mr. A. Gillett. Near Ackworth: Bracken Hill, Messrs. Seal and Sons; ditto, Messrs. J. Robinson and Sons; Welstrop Farm, Messrs. Camplin and Co.; Moor Top, Mr. J. Roberts; West Woods, Messrs. Westwood and Sons; College, Mr. S. Seal; ditto, Messrs. Camplin Bros. There are other important quarries at Saydale, Batley, Oulton, Eccleshill, Rothwell Haigh, Crossland, Oldham, Calverley, Rastrick, Brighouse, Clayton, &c. Some of the most important mines are Castle Fields, Rastrick, Messrs. Bentley and Smith; Scotgate Ash, Pateley Bridge, the Scotgate Ash Stone Co., Ltd.; Yew Tree, Lightcliffe; Tuckroyd; Park, Northowram; and Kirbroyd, Hipperholme, all worked by Messrs. J. Brooke and Sons; Far Park, Heaton, Mr. J. Kay's executors; Klondyke, Messrs. Walker and Co.; Longroyd, Messrs. Bentley and Kaye, &c. There are about fifty stone mines in this county, some of which, like the open quarries, furnish thin flagstones, which are used for roofing, and are called "slates," though, of course, they are not true slates, these latter being obtained from metamorphosed clay rocks and volcanic ash only. Millstone Grit consists of coarse and fine sandstone and conglomerates, with particles of shale. It is found around Pateley Bridge, Keighley, Ilkley, and to the west of the coalfield. It is divided into Upper, Middle, and Lower Grits, the several divisions not being always represented, and they are subject to great changes of thickness in small areas. The Millstone Grit is also divided into a series of "Grits." First, or Rough Rock; second, Haslingden Flags; third, Roaches Grit; and fourth, Kinder Scout Grit. The Plumpton or Knaresborough Red Grits, the Brimham Rocks, near Pateley Bridge; Birk Crag, Harrogate; Ilkley Crag, near Bradford; and Ryelof Hill, near Settle, are all formed of Millstone Grit. There is a quarry in these rocks at Black Leyburn which has been worked for 1,000 years. The principal quarries now in work are:—West End, Harworth Moor, Messrs. C. Barrett and Sons, Ltd.; Haystack Moor, Dacre, Mr. T. Wilkinson; Cat Castle, Hartington, Mr. J. Scott; Midgan, Harden, Bingley, Messrs. C. Barrett and Sons; Park Close, Salterforth, Mr. Isagar; Apperley-lane, Yeadon, Exors. Mr. H. Oddy; ditto, Messrs. T. Obank and Sons; Old Park, Crossland Hill, Messrs. Farer and Co.; Woodhouse, Holmbridge, Messrs. T. Larder and Co.; East Hangingstone, Ilkley Moor, Messrs. Taylor and Watkin. There are other quarries at Horsforth, Bingley, Slaithwaite, Keighley, Guiseley, Salterforth, Holmfirth, Hartington, Sowerby, Ilkley, Potternewton, Otley, Shipley, and other places. Yoredale Rocks, so called from their development in Yoredale or Wensleydale, are flagstones, dark shales and limestones, with coal seams, the whole attaining a thickness of about 600ft. They are quarried at Forcett, Mickleton, Giggleswick, Gilling, and Harthara. Lead ores are worked in these rocks at Swaledale, Wensleydale, Wharfedale, &c. The Carboniferous Limestone of this county is of the usual type, a bluish grey crystalline stone, sometimes called "Scar Limestone." It is quarried at Yoredale, Settle, by the Ribblesdale Lime and Flag Quarry Co. Ltd.; Langcliffe, Settle, the Craven Lime Co. Ltd.; Hambleton, Skipton, Messrs. T. Green and Son; Granite, Ingleton, Mr. J. Scott; Ry Gill, Lotherdale, Mr. P. W. Spencer; Thornton

Rock, M. P. W. Spencer, and at Howsham, Lotherdale, Shawl, Loxbourn, Akeds, Cononley; Ribblesdale, Settle; Horton in Ribblesdale, &c. The limestone is used generally for rough walling and lime-burning; Silurian rocks, known as Bannisdale Slates, are seen in the valley of the Rawthey, and they are also found near Ingletton and Settle. The beds are generally composed of sandy mudstone with thin bands of sandstone and grit, and are of the same age as the Aymestry, Ludlow, and Wenlock Limestones. Coniston Limestone, of the same age as the Bala Limestone, is found in Helen Gill, west of Dent. This stone is not much used for building, as it decays rapidly, and does not make good lime. It was at one time quarried for marble at Binks, near Dent, where it was worked into chimney-pieces. Coniston Flags and Grit furnish stone for rough walling; but this is only used locally. Basalt, an augite-auesite of dark grey or blue colour, is intrusive in the Lias and Oolitic Rocks of this county. It commences six miles south of Whitley, and extends across the Eden Valley, a distance of about 90 miles. This "Whinstone" is quarried for road-metalling, &c., at Middleton, in Teesdale; Green Gates, Lunedale; Great Ayton, and Barwick.

ANGLESEA.

The rocks here are Permian, Coal Measures, Millstone Grit, Carboniferous Limestone, Old Red Sandstone, Cambrian, Pre-Cambrian, Granite, and Greenstone. Amlwch is built on Mica Schist and Gneiss. Beaumaris: Upper Cambrian rocks of Bala age, Chlorite and Mica Schists. Holyhead: Chlorite and Mica Schists, Quartz Rock. Llangefni: Conglomerate of blocks in Green Shale, Schists, Carboniferous Limestone. Llanerchymedd: Lower Silurian black shales, with thin bands of Sandstone.

The surface of the island generally is covered with glacial detritus consisting of gravel, sand, and clay, with erratic boulders, many of which are ice-marked. The cultivated lands are on these glacial beds, or on alluvial plains derived from them by the present streams. Through these superficial deposits isolated masses of bare rocks appear, many of which are of considerable extent. In some places the glacial beds attain a great thickness. The Mount near Beaumaris is boulder clay, in which are imbedded large blocks of Carboniferous Limestone, slaty rocks, grits, quartz, greenstone, felspathic trap, granite, and sub-angular chalk flints. The same clay may be seen in section in the lower cliff along the coast east of Llanfaes and at Lleinos and Penmon. When the soil or other superficial accumulations are removed from the underlying rocks, these are seen to be striated in a direction running north-east and south-west, parallel to the Menai straits, a fact which goes to show that Anglesea was glaciated from the Cumberland hills, and not from Snowdon. The blocks of stone found scattered elsewhere on the beach are mostly of glacial origin, many of them being rocks not found in situ here. Permian strata, consisting of Conglomerate and Red Marl are supposed to overlie the Coal Measures, they are nowhere seen on the surface, and their existence is inferred from the fact that such rocks have been passed through and brought up in boring for coal. They attain a thickness of from 80ft to 200ft. The coal-field underlies Maeldraeth Marsh; it extends for about nine miles in a north-easterly direction from Maeldraeth Bay, and is about one and a half mile wide: it rests on Carboniferous Limestone, the coal and limestone having both been saved from denudation by a "fault" which has a downthrow of 2,300ft. It may be explained here that a fault is a local crack or fissure, vertical or oblique, running through the great masses of rock which go to form what is known as the earth's crust. Builders would call it a "settlement" if applied to stone or brick walling. A fault may be a mere crack in successive layers of rock; but more frequently there is displacement in the rocks so faulted, and beds that were once continuous are not only discovered, but they also are left at different levels on opposite sides of the fissure, the displacement being reckoned by hundreds of feet—in the case of the Anglesea Coal Measures it is, as has been stated, 2,300ft. In fact, a fault, if continued up through a building on the surface, would split that building from foundation to roof, and lower the latter some hundreds or thousands of feet below the foundations. Such cracks or faults are common to the solid rocks all over the world. The Coal Measures have been

worked for coal, but they yield no building-stone. Millstone Grit takes the form of a long narrow tract east and north-east of Llangefni, bordering the Carboniferous Limestone along the south. It consists of yellow sandstones, conglomerate, and a bed of coal a yard thick, which was worked at Glantraeth, the whole attaining a thickness of about 400ft. None of these sandstones are worked for building. Carboniferous Limestone is seen along the north coast from Lligwy to Penraeth, from which place it ranges inland to Llangefni, where it narrows to a strip a few hundred yards wide, and about 450ft. thick, which runs south to Bodorgan, where it thins out altogether on the Millstone Grit. The limestone of this tract consists of a basal bed of Sandstone and Conglomerate, associated with which are nests and lenticular beds of hard grey limestone, filled with encrinites and corals, overlain by a bed of impure limestone resembling cornstone. This basal series is capped by the ordinary Carboniferous Limestone, which, however, in this locality, includes beds of sandstone, and bands of shale and black limestone. Another tract of limestone is found occupying a triangular area in the east of the island, which is evidently a continuation of the limestone of Puffin Island and Great Orme's Head, and probably that of Flintshire and Denbighshire. These rocks are similar to those at Lligwy Bay, already described. At Penmon, the limestone is partly a crystalline Dolomite, which was used in building Beaumaris and Carnarvon castles; and the same stone, from Penmon and Benllech quarries, was used for the piers of the Menai and Britannia bridges. A third band of limestone, about three-quarters of a mile wide, is found in the south-west of the Menai Straits; it ranges from Llanfair-Pwllgwyngyll by the Menai Bridge to Traeth Melynog, opposite Carnarvon. The limestone here is grey, and sometimes reddish and black, with bands of Sandstone and Calcareous Conglomerate, overlaid by marly shales, the whole deposit having a shingly and beach-like aspect, as if the beds formed a margin of the old Carboniferous sea. Fine, small greenstone dykes penetrate and alter these rocks. Carboniferous limestone is the building stone of the county. The parapet, coping, pavement, &c., of the Holyhead breakwater are of limestone from Maelre Quarry, near Beaumaris. The limestone is now worked at Flagstaff, Beaumaris, Messrs. W. Baird and Co.; Traeth Bychan, Mr. J. R. Roberts; Penmon Park, the Penmon Park Quarry Co.; Gwydryn, Brynsiencyn, Mr. R. R. Roberts; Porthamel, Moel-y-Don, Mr. R. Edmunds; Plas Newydd, Mr. F. Turner; and Tan-y-Marian, Llangog, Mr. D. Evans. The classification of the Old Red Sandstone of Anglesea is unsettled. The rock consists of Conglomerates, red and grey Sandstones, and Cornstones, which border the Limestones, and are from 200 to 300ft. thick; these rest unconformably on older rocks, and pass up gradually without any marked divisional plane into the Carboniferous Limestone above. Whether these are true Old Red Sandstones or shore beds of Carboniferous Limestone, is not yet decided. Silurian rocks of the same age as the May Hill Sandstone are probably represented near Treiorwerth; they furnish rough-wallings stones only. More than one-half the area of the entire island—viz., that portion west of Llangefni—is occupied by micaceous and chloritic schists, gneissic rocks, grits, and quartz rocks, all of which are traversed by igneous dykes, and are associated with granites and granitoid rocks. The age of these is a matter of dispute, and their exact equivalents elsewhere have not been accurately determined. With the exception of the intrusive igneous rocks, they are chiefly altered sedimentary strata similar in appearance to the Lewisian rocks of North-west Scotland. Dr. Callaway, who has attempted "to sort them out," identifies a slaty and gneissic series of Pre-Cambrian beds, the former consisting of grits, slates, schists, shales, and limestones, and the latter of halfeifints, quartz schist, greenish grey schist, and granitoidite. The gneissic rocks are faulted against the slaty series, and being more intensely metamorphosed, they are probably of much greater age. Dr. Hicks, another authority on the older rocks, divided the Pre-Cambrian into three series—viz., Pebidian, Dimetian, and Arvonian. The slaty series here are correlated with the Pebidian, and the gneissic with the Dimetian and Arvonian; but Sir A. Ramsay held that all these rocks are metamorphosed Cambrian. Holyhead Island and the North and South Stacks are gneiss, grits, and schists, violently contorted.

These are probably Pre-Cambrian. Certain slaty rocks have been identified as belonging to the Cambrian Arenig and Tremadoc slates, and the Baron Hill grit near Beaumaris is supposed to belong to the Cambrian basement beds; but here again some geologists doubt if there are any Lower Cambrian rocks in Anglesea. The Mudstones of Llanfaelrhys are supposed to represent the Upper Cambrian Llanfihangel Flags (so called from Llandeilo in Carnarvonshire), and Professor Hughes suggests that the great masses of gneissed greenish shales with gritty and serpentineous bands which run from Parys Mountain to Cymmerau Bay may belong to the Caradoc Beds and the Bala volcanic series. Pre-Cambrian or metamorphosed Cambrian (?) rocks are quarried in Holyhead Mountain at the silica works by Messrs. Wild and Son, the stone being a true quartz schist with pale green mica. During the progress of the Holyhead breakwater works as much as 118,000 tons of the stone were brought down at one blasting! Quartzite and clay were quarried at Porthwen by the Porthwen Silica Co., Ltd. A grit supposed to be Cambrian is quarried at Tanalltran, on the estate of Lord Alderley, Mr. Tower, agent. "Mona Marble" is quarried at Rhoscolyn, on the south side of Holyhead Island, some of the associated beds in these schistose rocks being burnt for lime, and others used for walling. Some of the most suitable beds when cut and polished are called "marble," but they are really serpentine, of a greenish grey colour much streaked with white, and very inferior as an ornamental stone to the Ophi-calcite known as "Galway Green" or "Connemara" marble. The origin of the Rhoscolyn Serpentine is a trifle obscure, for eminent geologists have formulated the following theories about it:—(1) That it is an altered intrusive rock, "olivine"; (2) that it is an altered actinolitic rock, and (3) that it is an altered representative of some ancient sedimentary rock. All agree it has been metamorphosed, but whether the original unaltered rock was of igneous or aqueous origin is not decided. The composition of Rhoscolyn Serpentine is as follows: Water 12.52, silica 38.74, alumina 4.15, iron peroxide 5.21, iron protoxide 4.34, magnesia 33.83, alkalies 0.70. The Anglesea Granite is, according to some geologists, a granitoidite; others suggest it belongs to a class of ill-defined granite rocks known in Cornwall as "bastard granite," the plain Saxon of which name is preferable to the cacophony of Granitoidite. The Carboniferous Limestone of Lligwy has been polished for marble; it is of a dirty smoke colour, with darker spots of the same hue. One cannot help thinking that, in polishing this stone, much labour is expended in spoiling a fairly good walling stone to make a very undesirable marble.

(To be continued.)

BY-LAWS IN RURAL DISTRICTS.

AN instructive paper on Building By-laws in Rural Districts, and discussion thereon, appears in the Report of the Proceedings of the Twenty-sixth Annual Poor Law Conference for the South-Eastern and Metropolitan Districts, held at the Royal United Service Institution, Whitehall, on December 6 and 7 last. The paper was read by Mr. H. G. Willink, chairman of the Bradford Rural District Council, and treats on new streets in rural districts, having special reference to cottage tenements. Rural district councils are not under any obligation to make by-laws of this kind, nor until 1890 could they do so unless invested unconditionally under section 276 of the Public Health Act, 1875, by the Local Government Board with the powers of an urban authority. These powers are to be found in section 157 with respect to (1) the level, width, and construction of new streets, and the provision for sewerage; (2) with respect to the structure of walls, foundations, roofs, and chimneys of new buildings, for securing stability and the prevention of fires, and for purposes of health; (3) with respect to the sufficiency of space about buildings to secure a free circulation of air, and with respect to the ventilation of buildings; and (4) with respect to drainage of buildings, &c. These powers are extended by section 23, by which the urban authority can make by-laws as to water-closets' supply, structure of floors, hearths, and staircases, and the height of rooms, paving of yards, &c., and the secondary means of access for

removal of these refuse. By the Public Health Act of 1890 rural authorities may of their own motion, subject to proper notices, adopt Part III. of that Act, and thus dispense with the initiatory application to the L.G.B. under section 276. Section 276 empowers the L.G.B. to extend urban provisions, or grant urban powers, to rural areas upon the application either of the district authority, or, in the alternative, of ratepayers whose assessments amount to one-tenth of the net rateable value of the areas in which such powers are to be granted. District councils are not compelled to exercise these powers or make by-laws, and thus we have large districts without any building and sanitary regulations. We know of some rural districts where the local authorities were dominated by small speculative builders and owners of badly-built cottages, others where the by-laws were framed to meet the prejudices of these small property owners, and which had resulted in very little improvement. But the by-laws framed should be suitable to rural districts, and sanitary regulations appear to be the most important part. Mr. Willink's paper is a useful summary of the Acts. The process of obtaining power to make by-laws has been simplified by the Act of 1890, though the procedure under the old Act is the same. We come, however, to the main question that has been raised by the author. How far should urban by-laws and building regulations be applied to rural districts? Or is there any need in rural districts for interference with the rights of property as the compliance with the by-laws would entail? After referring to the model by-laws and their principal objects, the author points to those objects which apply to both urban and rural localities; but, as he justly remarks, there "may be differences of opinion whether in rural districts their attainment should be compulsorily and directly promoted by the means of by-laws." To secure open areas, both rural and urban districts are interested, and by-laws are necessary, so with securing air space round buildings, and the disposal of refuse. By-laws to secure the proper construction of new buildings is a question upon which there have been doubts. It is thought that there should be no interference with the rights of property in rural districts. We are quite of the opinion that good reasons should be shown for the voluntary adoption in rural districts of by-laws framed to meet urban requirements, and prohibitive of forms of construction, which for private dwelling houses and for agricultural buildings have been found to be economical and suitable. We especially allude here to half-timber and other buildings which are very suitable in many country districts. Mr. Willink refers to the provisions with regard to sites and concrete-covered surfaces, materials in walls, thickness of walls, footings, damp-courses, recesses and copings, woodwork and roofs, open spaces; but his main question is, What kind of by-laws ought to be enforced in rural districts? Is it really necessary to harass everybody for the sake of one class? Answering this question, the author asks, What are the restrictions most felt and least essential in these districts? The first are felt by builders of houses for the well-to-do classes, whose sites have plenty of space, and for whom restrictions are useless. Then there are objections relating to farm buildings. People may ask themselves whether it is necessary to build a pig-sty or even a cowshed of 9in. brick when there are no other buildings within 100 yards. The cottager is not benefited when he is prevented from erecting a little wooden lean-to as a shelter for his donkey cart, and many other harmless structures may be mentioned that would be prevented under urban by-laws. The suggestions made by the author appear to be reasonable. The principal of them are briefly—

(1) The operation of structural by-laws might be confined, except as to cottages, to certain semi-rural or village areas, which could be defined from time to time by the council. As to cottages, they might define it to be any building constructed or adapted to be used, either wholly or partly, for human habitation, whose rateable value does not exceed £5. (2) The by-laws in question might be restricted to "dwelling-houses," "public buildings," and "buildings of the warehouse class." This would meet the point which might be raised, that servants and other dependent persons in houses above cottage size, need, no less than cottagers, protection as to the kind of building in which they sleep. And it would obviate all trouble about farm

buildings, lean-to's, &c., which now come within the term "domestic" building. These limitations of the urban by-laws would much simplify the question, and enable rural districts to adopt building by-laws to meet their peculiar circumstances. To adopt the official model would be absurdly restrictive and suicidal to all building operations, and, as the author observes, it is easier to secure any variations that councils may desire than afterwards to make amendments and alterations to the official by-laws. We refer our readers to the discussion that follows the paper, also to the other papers read—"The Technical Training in Poor-Law Schools," by J. G. Wainwright, Chairman of the North Surrey Schools, Anerley; "The Proper Use of Poor-Law Infirmary," by Miss Alexander and Miss Wilde, Guardians of Kensington Union, and the discussions on these papers.

LOCKS AND BRASS-FOUNDRY.

MESSRS. LOCKERBIE AND WILKINSON, Ltd., of the Army and Navy Mansions, 109, Victoria-street, S.W., and of Birmingham and Tipton, have sent us a copy of their new illustrated catalogue, a very handsomely designed and bound volume, clearly printed, full of excellent photographic illustrations and descriptions of the several departments of their business. The descriptions and prices are very full and complete, and relate to locks, brass-foundry, sliding-door fittings, fanlight gearing, &c., lock furniture, casement handles, repoussé and copper grates, wood mantels, &c. We notice the patent lever mortise locks, as the "Palace Motion" and the "Premier," illustrated to full-size by a photographic process that insures accuracy of detail. The Palace Motion roller-bolt lever-lock is an ingenious and highly-finished lock, varying in price from 6s. to 16s., and the "Premier" patent weighted lock is actuated by a weight instead of a spring, and is less liable to get out of order. The taste for simplicity in design and superior workmanship has been very successfully met by the lock furniture and door-handle hinges shown in the plates. The lock plates, in beaten copper, &c., hand-worked, p. 29, and the repoussé plates on pp. 30, 31, and 32, &c., are very effective; but it would be impossible to notice all the departments so profusely illustrated. The sliding-door fittings are well worth the attention of architects. The ball-bearing runners, tubular ball-bearing fittings, for doors of this description are a great improvement on the usual methods; no fittings are seen. Illustrations of doors fitted are given. The tubular ball-bearing fittings and accordion partitions have come to the front very quickly, and the prices hardly exceed the old wheel arrangements with rails. Other important specialities shown are the folding and sliding partitions, largely used in board schools. The fanlight gearings shown are excellent. The grates, in beaten copper, brass, &c., and the wood mantels show some very artistic designs (see pp. 133-139). A photograph is shown of the Blackburn Palm House, an attractive cast-iron structure, erected by the corporation. The rainwater head, in iron and lead, designed by Mr. C. A. Nicholson, on the end page, is pleasingly simple. Some idea of the scope and variety of Messrs. Lockerbie and Wilkinson's old-established business may be gained by a glance at the concluding pages of this very comprehensive and well-compiled catalogue. The front cover has been designed by Mr. D. W. Kennedy, and the work cannot fail to take its place amongst the higher-class catalogues in the architect's office library.

A detailed statement of the cost of the renovation of Stoney parish church has just been issued. The total cost was £5,426 17s. 3d., and every penny of the money has been subscribed.

The special committee of the Leith Town Council upon tramways had a conference recently with the secretary and manager of the Leith Tramways Company, Mr. J. S. Adam, the company's engineer; Mr. Brebner, and the burgh electrical engineer, Mr. Scott, when it was arranged that the present 4ft. way between the two sets of lines should be widened to 6ft. to admit of the erection hereafter of the pillars for the carrying of the overhead electric wires; and that the bonding of the lines for electric haulage should be proceeded with at the sight and to the satisfaction of the burgh electrical engineer.

OBITUARY.

THE death is announced of Mr. FREDERICK CLARK WITHERS, architect, who had long resided in New York. Mr. Withers was born at Shepton Mallet, in Somersetshire, some 72 years ago. He was trained for his profession in London, but decided to practise in the United States, and reached New York in 1853, leaving in England a brother educated with him, who afterwards obtained professional distinction. Mr. Withers had hardly established himself in business in New York before the Civil War broke out, and he entered the service as a lieutenant of volunteers. A year later he was sent home invalided. As soon as he was able to resume practice, he opened an office in New York, where he soon gained a high reputation. At first as a partner of Calvert Vaux, the associate and the successor of the great Downing, and, later, by himself or with younger partners, "his refined taste and knowledge were valued," says the *American Architect*, "as they deserved to be, both by the profession and the public. Inclination, rather than worldly shrewdness, led him to devote much time to the designing of churches, and his work in this branch of the art is still conspicuous for its scholarly refinement; but he also carried out many public and private buildings, such as the Jefferson Market court-house and prison, in New York, the Poughkeepsie Asylum, the new City Prison, and others less conspicuous."

CHIPS.

The Wigan Corporation electric trams commenced running for the first time last week, the populous district between the Market-place and Maitland Mill Bridge being covered. This is the first instalment of the tramway system, which is being laid down by the Wigan Corporation, at a cost of about £150,000.

On Wednesday week the new Primitive Methodist Chapel at Norton Subcourse, Norfolk, was opened. The chapel is of red brick, faced with brick and stone. The open benches and rostrum are of pitch-pine, and the floor is laid with wood blocks. The interior of the roof is constructed of polished Caroline deal. Adjoining the chapel, and opening into it by sliding panels, is a schoolroom, accommodating 100 persons. The chapel itself will seat about 150. The brickwork has been carried out by Mr. W. Wynnes, of Thurlton, and the woodwork by Messrs. Chaston and Grimson, of Lodon.

The Railway and Canal Commissioners have dealt with a complaint by the vestry of St. Mary's, Battersea, that the water supplied for domestic use to the inhabitants of Battersea by the Southwark and Vauxhall Water Company was on many occasions not "effectually filtered" nor "pure and wholesome" within the meaning of the statute. A number of expert witnesses gave evidence on behalf of the company that the water was of exceptionally good quality, and that the company had continually been taking steps of their own accord to improve the quality of the water, and to increase the efficiency of the filtration. The Court dismissed the complaint, but without costs.

The new power station and depot of the Potteries Electric Traction Company at May Bank, Newcastle-under-Lyme, is rapidly progressing towards completion. The engine-house and other buildings, including shedding for 16 cars, have been erected, although not yet complete. Offices and other buildings have also still to be erected. There have also been erected at this station two large dynamos by Messrs. Brown, Lindley, and Co., Manchester. The engines are of 400 H.P. each, with a voltage of 550,400 ampères, and 350 revolutions. A feature of each is that they are the first dynamos to be fitted with a patent lever designed to stop sparking on the commutator. These two engines will be worked alternately.

The reopening of the Macclesfield Parish Church, the restoration of which is now almost completed, the work having been carried out at a cost of £20,000, has been arranged for April 24. The ceremony is to be conducted by the Bishop of Chester.

It is intended to erect a branch library and baths in York-road, Leeds, at a cost of about £1,500. It has this week been decided that the library shall contain a general newsroom, a lending department, boys' and girls' separate reading-room to be opened in the evenings, a common room, and a women's reading-room. From 700 to 800 square yards of land will be required for this purpose, and all the rooms are to be on the ground floor. The city engineer, Mr. Thomas Hewson, has been instructed to prepare rough block plans to be submitted to the next meeting. After the city council has approved of the general scheme, competitive designs will be invited by advertisement.

Building Intelligence.

LONDON COUNTY COUNCIL.—At Tuesday's meeting a letter was read from Mr. L. J. Horniman, a member, intimating that his father, Mr. F. J. Horniman, M.P., offered as a free gift to the people of London some fifteen acres of freehold land near Lordship-lane Station, with a large house, a museum just erected at a cost of about £40,000, the large art and natural history collections made by Mr. Horniman, a library of over 6,000 volumes, and six residences now let on lease and bringing in an income of about £400 per annum. The offer was accepted with thanks. The joint report of the water and public health committees, condemning the proposed new regulations of the London water companies, was unanimously received, and the detailed recommendations of the committees in opposition to the various regulations were also approved with some modifications. A resolution was passed in favour of the construction of subways under all the leading thoroughfares of the Metropolis to contain all the gas and water pipes and telephone and telegraph wires.

EDINBURGH.—The General Public Library Committee of the Edinburgh Town Council propose to extend the central library buildings. What is proposed is to erect on ground belonging to the library a building on the north-west corner of the site to correspond with the juvenile library, which is situated on the north-east corner. Forming part of the original scheme of the architect (Mr. G. Washington Browne, A.R.S.A., of Edinburgh), plans for the new work have been prepared in the city superintendent's office. They show a building measuring 34ft. by 31ft., and rising to a height of about 100ft. It will contain four floors, some of which are subdivided. The ground flat is to be fitted up as a magazine room. On a level with the library two fireproof compartments, rising to a height of about 26ft., will be constructed. These will be subdivided into book-racks of three stories. The flat between the news-room floor and Cowgate will be similarly subdivided, and the subsidiary floors will consist of cast-iron perforated gratings. All the floors will communicate by means of a book-lift and a short internal staircase. Altogether, provision will be made to house between 120,000 to 130,000 volumes. The new building, which, architecturally, will be constructed in keeping with the existing block of buildings, and will be lighted from the west side, will, it is estimated, cost about £6,000.

GLASGOW EXHIBITION.—The Irish Pavilion will be a feature of the Glasgow Exhibition. It is an exact reproduction of an old squire's house, and is being erected to the north-east of the Stewart Memorial Fountain, in close proximity to the Canadian and Russian sections. The building was planned by Mr. M. T. Manly Deane, architect, Dublin, has a frontage of 68ft., and extends to the north 80ft. There are four rooms, two on the front and two on the east side, the west side being occupied by a closed court. The porch leads to a spacious hall, behind which are the official offices. When completed, the pavilion, with its shady verandah and thatched roof, will present a quaint appearance. Inside will be displayed representative products of Irish industries. The selection is being made by the Department of Agriculture and Technical Instruction, with the approval of the Irish Agricultural Board.

MILTONHAMSTEAD.—In memory of his father, the late Right Hon. W. H. Smith, the Hon. W. F. D. Smith, M.P., has just built a district hospital in this moorland town. The hospital stands on half an acre of land at Forder Meadow, on the Chagford-road. Of south aspect, it is quadrangular in form. The entrance is flanked by gable ends, with the female wards on the left and the male wards on the right. Capable of accommodating eight patients, provision is made at present for five beds, one of which is in a separate ward. In addition, there are the matron's sitting-room, operating theatre, three bedrooms for the staff, together with linen-closet, larder, kitchen, bathroom, and domestic offices, and laundry and mortuary in the rear. All the rooms are on the ground floor, and none are less than 11ft. in height. A corridor runs round the premises, and the courtyard in the centre is concreted. This corridor is lined with a dado of green-tinted Minton tiles. The grey Albion stone front with granite dressings, and the

Whitland Abbey green-slatted roof, present an attractive appearance from outside. The plans for the hospital were prepared by Mr. F. East, clerk of the works to Mr. Smith, and the work was executed under his direction by the estates workmen.

COMPETITIONS.

PORTSMOUTH.—For the proposed new technical institute and public library, to be erected in Park-road, competitors in which were restricted to local architects, six sets of designs were received, the names of the successful competitors being:—First premium, £100 (to be merged in the 5 per cent. commission), Mr. G. E. Smith, Victoria-road, Southsea; second, £75, Messrs. Rake and Cogswell, Prudential Buildings, Landport; and third, £50, Mr. C. W. Bevis, F.R.I.B.A., Elm-grove, Southsea. The assessor was Mr. A. W. S. Cross, F.R.I.B.A., of 58, Conduit-street, Regent-street, W. The cost was limited in the instructions to £43,000, and we learn that various modifications will be made in the selected design, by the desire of the committee.

WESTERHOPE.—The trustees of the proposed new Wesleyan church at Westerhope have unanimously selected the designs submitted in a limited competition by Messrs. Marshall and Tweedy, architects, Newcastle-on-Tyne. Their scheme shows a church to seat 500, with large school hall and smaller hall to accommodate 100, vestries, and caretaker's house. The buildings are to be of stone, with a spire placed midway between church and school. A commencement with the scheme will be made in the spring.

CHIPS.

Mr. W. O. E. Meade King, M.I.C.E., has held an inquiry at Seaford on behalf of the Local Government Board, into an application of the urban district council to borrow £2,000 for street improvement works.

The town council of Brighton have decided to lay Red-gum hardwood instead of Jarrah on such of the tram routes as are to be paved with wood. The cost will be 12s. 7d. instead of 13s. 9d. per square yard.

Mr. W. E. Fletcher, an inspector of the Local Government Board, has held an inquiry at Ilford into the application of the urban district council to borrow £9,445 for alteration and extension of their infectious diseases hospital at Chadwell.

A stained-glass window will shortly be placed in the east end of Walton-on-Naze Parish Church, in memory of the late Mr. P. S. Bruff, M.Inst.C.E., of Ipswich, the founder of that watering-place, by members of his family.

At a general assembly of the Royal Society of Painters in Water Colours, the following have been elected associates of the society:—Mr. Reginald Barratt, Mr. R. Anning Bell, Mr. J. Walter West, and Miss Minnie Smythe.

Col. W. Coke, M.Inst.C.E., held an inquiry at the Council House, Bristol, recently, respecting an application made by the Local Government Board for sanction to borrow £23,960 for street improvement purposes, and £7,000 for public walks and pleasure grounds.

The American Society of Civil Engineers, at its annual business meeting on January 16, elected as president Mr. J. James R. Croes, and as vice-presidents Messrs. Henry S. Haines and George H. Benzenberg. The report of the Board of Direction showed the total membership to be 2,337, a gain of 138 in the year.

The practical completion of a long-needed public improvement was signalled at St. Helen's last week, when the Borough-road extension, providing an alternative route to Prescott-road and the highway to Liverpool, was thrown open for public use.

The new St. Helen's schools were opened by the Hastings School Board last week. They serve the suburb of Ore, and consist of a building of two floors, each having a central hall 54ft. by 25ft., and four classrooms. The walls are of red brickwork. Accommodation has been provided for 450 children at a cost of £9,755, exclusive of site.

The jury on the Indianapolis post-office, Messrs. James Knox Taylor, H. Langford Warren, D. H. Burnham, J. Rush Marshall, and Edward B. Green, have awarded the first premium to Messrs. Rankin and Kellogg, Philadelphia, and the second to Messrs. Eames and Young, St. Louis. For third premium the jury considers of equal merit the plans of Messrs. Bonnet and Bohn, Indianapolis, Mr. J. H. Silsbee, Chicago, and Andrews, Jacques, and Rantoule, Boston.

Engineering Notes.

GR. NORTH AND CH. R. WAY. The report of this company, adopted at the meeting on Tuesday, states that two additional shields have been erected and are now working at Drayton Park, where 460 lineal yards of tunnel have been driven. At Essex-road the station tunnels have both been driven to their full length, and the construction of the connecting-passages is being proceeded with. At Regent's Canal the up and down-line tunnels have been driven for distances which, together, amount to nearly two miles, and through communication is established with Essex-road. Two additional shields to drive southwards will shortly be erected at Old-street, where a shaft has been sunk, and the up-line station tunnel has been commenced. At Finsbury-pavement a shaft has been sunk to its full depth, and the connecting-passages is in course of construction. Tenders have been invited for the supply of electrical plant.

MOTHERWELL.—The principal streets of Motherwell were, on Friday, for the first time, illuminated with electric light, as the result of the scheme adopted by the town council two years ago. The generating station, from plans by Mr. James Cowie, Motherwell, is situated in Watson-street, and is a plain brick building, constructed with a view to future extension. The plant consists of two 100H.P. engines and two 40H.P. engines, coupled to four dynamos. Steam is supplied by two Lancashire boilers, each 23ft. by 8ft. Two Carruthers' compound duplex pumps, each capable of delivering 1,400 gallons of water per hour, have been installed, and arranged in duplicate to minimise risk of a breakdown. A battery of 252 cells has been erected by the Electrical Power Storage Company, Ltd., London, of 200 ampere-hour capacity. The exhaust steam from the boilers passes through a Royle's feed-heater, which is arranged to heat the feed-water on its way to the boilers. Four feeder cables have been laid from the station to various points in the borough, the aggregate length being about 40,000 yards, armoured and laid direct in the ground. The present plant is capable of supplying about four thousand 8c.p. lamps, and the principal streets are illuminated by arc lamps, swung from lofty posts. The remainder of the borough will be lit by four hundred 32c.p. incandescent lamps, erected on the existing lamp-standards. Professor A. B. W. Kennedy, London, has been consulting engineer to the borough, and under his instructions the work was carried out.

The Roman Catholic Bishop of Leeds has caused plans for a new cathedral to be deposited with the city authorities of that town. The building, which is to take the place of St. Anne's (to be demolished for street improvements), will occupy a site between the Masonic Hall and Cookridge-street. It is estimated that the cost of the cathedral, together with that of the presbytery, will be £33,000, which will be defrayed out of the sum, estimated at £46,000, due from the corporation in connection with street improvements. The architect of the new building is Mr. J. H. Eastwood, of Chenison-gardens, Kensington, W.

The late Mr. R. B. West, of Exeter, bequeathed a site for a county cricket ground to be provided on Pennsylvania, on his estate. The surface is now to be levelled, the field drained, turfed, and inclosed, in addition to which an approach road 40ft. in width and 1,000ft. in length will be constructed. Plans have been prepared by Messrs. Ellis, Son, and Bowden, F.S.I., of Exeter, and the tender of Mr. Harris, Clysthydon, at the sum of £4,600, has been accepted. The field will be completed during the summer, and be ready for use the subsequent season. The total value of Mr. West's gift in this connection will be £10,000.

The new Church Institute in High Shellgate, Ripon, was opened on Friday last. It includes a reading-room 25ft. by 19ft., a ladies'-room 14ft. by 10ft., and other apartments. It has been built from the designs of Mr. T. Wall, architect, by Mr. J. H. Coldbeck, the other contractors being Messrs. Benson and White, plumbers; Mr. J. Baynes, slater; Mr. A. J. G. Almond, painter; Mr. W. E. Dixon, stoves. All of Ripon.

At the last meeting of the town council of Lancaster, Mr. W. A. Tester, of Plymouth, was appointed tramway and electrical engineer, at a salary of £300 a year, and it was reported that Mr. Fraser, the electric-lighting engineer, had returned from South Africa and resumed his duties.

NOTICE.

The Editorial, Advertising, and Publishing Offices of the BUILDING NEWS AND ENGINEERING JOURNAL are at—

**CLEMENT'S HOUSE,
CLEMENT'S INN PASSAGE, STRAND,
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Telephone No. 1933 Holborn.

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TO CORRESPONDENTS.

[We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.]

It is particularly requested that all drawings and all communications respecting illustrations or literary matter should be addressed to the EDITOR of the BUILDING NEWS, Clement's House, Clement's Inn Passage, Strand, W.C., and not to members of the staff by name. Delay is not unfrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

Cheques and Post-office Orders to be made payable to THE STRAND NEWSPAPER COMPANY, LIMITED.

NOTICE.

Bound copies of Vol. LXXVIII. are now ready, and should be ordered early (price 12s. each, by post 12s. 6d.), as only a limited number are done up. A few bound volumes of Vols. XXXIX., XLI., XLVI., XLIX., LI., LII., LXII., LXIII., LXV., LXVI., LXVII., LXVIII., LXIX., LXXI., LXXII., LXXIII., LXXIV., LXXV., LXXVI., and LXXVII. may still be obtained at the same price; all the other bound volumes are out of print. Most of the back numbers of former volumes are, however, to be had singly. Subscribers requiring any back numbers to complete volume just ended should order at once, as many of them soon run out of print.

Indissemble Cloth Cases for Binding the BUILDING NEWS price 2s. post free 2s. 4d., can be obtained from any Newsagent, or from the Publisher, Clement's House, Clement's Inn Passage, Strand, London, W.C.

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Front-page Advertisements 2s. per line, and Paragraph Advertisements 1s. per line. No Front-page or Paragraph Advertisement inserted for less than 6s.

Advertisements for the current week must reach the office not later than 3 p.m. on Thursday. Front-page Advertisements and alterations in serial advertisements must reach the office by Tuesday morning to secure insertion.

SITUATIONS.

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"BUILDING NEWS" DESIGNING CLUB.

Drawings Received.—"Obit," "Embryo," "Maori," "Tally," "Q. D.," "Mute," "The Kid," "Quercus," "Dental Point," "Gow Chrym," "Dan," "Tarums," "Salinas," "Primus," "Pierrot," "Blom," "Tom Thumb," "Scottie," "Iolanthe," "Esolier," "Brutus," "Ruhtra."

Correspondence.

BRITISH & AMERICAN BUILDERS' HARDWARE.

To the Editor of the BUILDING NEWS.

SIR,—I have just returned from the United States, and I can tell the manufacturers of British builders' hardware that their business is practically dead if they do not wake up. In 1899 the Yankees exported £52,900 worth of

builders' hardware to this country. Last year they sent us £265,100. This year they will double the last amount.

The ordinary British manufacturer is contented to go on in the old groove, and to push his wares through ordinary channels. He will regret it when it is too late. I speak what I know.—I am, &c., A BRITISH ARCHITECT.

ST. ALBAN'S SCREEN: A FINAL WORD.

SIR,—I am quite aware that St. Alban's Abbey "that was" is and has long been a cathedral. Possibly Mr. Hems is unaware that Queen Anne is dead! (I wish modern Queen Anne work were dead!) If Mr. H. will be good enough to turn to the Preface, he will see I state that the abbey in my book clustered round London in the Middle Ages; several of the sites are, of course, actually in London now, such as Westminster, Bermondsey, and Stratford-Langthorne.

With regard to the fact that I reproduce articles from the *Lamp* and the *Sunday Comet* in my book: I presume I am entitled to do so with my own contributions, on receipt of the permission of the respective editors, and such permission practically—anyhow, morally—binds me to reproduce such articles *verbatim et literatim*. As to the source of my information re screen, I may be mistaken. I have, apparently, sinned in good company—viz., with Messrs. Ashdown and Kitton.

I can quite understand Mr. H. feeling hurt at my mistake re restorer of the screen; but is he not making a mountain out of a molehill? Mr. Sedding's screen work is excellent, and he was quite at liberty to give his views on anything in his way of business. Perhaps Mr. H. has not seen the illustrated article on Sedding and his work, which appeared in the *Architectural Review* a few years ago. Probably one of the best screens he ever designed was, I believe, that for Shorwell, I.W.; but I do not know whether that one is illustrated in that article. I saw the design either in the BUILDING NEWS or the *Builder*; but again I may have been mistaken in attributing the design to him.

I need hardly say I regret to see Mr. H. referring to the Martyr St. Amphibalus as *that gentleman*! To say the least, such an expression is in very bad taste, and very offensive.

As to fiction in modern history, there is very little fiction to be found in my book; and perhaps the most valuable claims to the support of architects that I have for my venture are that I give (for 1s. 2d. post free) over 40 illustrations from old prints, and also the History of the Augmentation Office, where the Deeds of Surrender were deposited.

I do not write the above to advertise my book, but only to clear myself of any misapprehensions the profession may have with regard to the book. I have endeavoured to do my best, and, as at present, owing chiefly to the War and to the miscarriage of press copies in the post, the reviews have been scanty in number, and my sales have been slack, I take this opportunity of asking for the support of my venture, and I cheerfully leave the judgment of the book in the hands of my readers, knowing that they have "half-a-crown's worth for a shilling" (in the words of a well-known London publisher).—I am, &c., JOHN A. RANDOLPH.

Feb. 4, 1901.

A stained-glass window has been placed on the east side of Wesley's Chapel, City-road, as a memorial to the late Mr. W. Willmer Pocock, F.R.I.B.A., the architect of the Metropolitan Tabernacle. Mr. Pocock, who at the date of his death was the senior member of the Royal Institute of British Architects, was for many years closely connected with Metropolitan Methodism, his grandfather having been present when John Wesley laid the foundation-stone of the City-road Chapel nearly a century and a quarter ago. The memorial window has a representation of King Solomon and his Temple.

The new abattoirs which have been erected by the Wolverhampton Corporation at the Public Cattle Market, were formally opened on Tuesday. The works have been carried out for £8,000. The accommodation provided consists of a six-roomed house for the superintendent, with external larder and other out-offices, the conversion of the old slaughter-houses and boiler-house into additional stores, cattle lairage 36ft. by 52ft.; two slaughter halls for cattle and sheep, each 26 ft. by 36ft.; pig slaughter hall 65ft. by 30ft., &c. For the purposes of horse sales, a large auction hall has been erected, and a store-shed for cattle adjacent.

Intercommunication.

QUESTIONS.

[11482.]—Houses for South America.—Printed drawings for stone or brick houses for the suburbs of town and for the country (South America), sort of summer resorts similar to the seashore, suitable for a climate which in the summer time registers a temperature of 100 to 120 Fahr. in the sun, and in the winter time slight touches of frost. Heavy rains during the wet season, which lasts about five months. No luxurious houses wanted, but those suitable for the fairly well-to-do middle classes. Drawings to show exterior and interior, and all types of houses to be suitable for summer occupation only, with plenty of verandahs, &c. Catalogues of suitable furniture and general house fittings also wanted. Can anyone give me hints?—W. V. V. LUGGERWOOD, 52, Albert Hall Mansions, South Kensington.

[11483.]—Billiard-Room.—I shall be obliged if one of your readers who has had any experience in the building of billiard-rooms will give me any information that will assist me in constructing a billiard-room floor—whether iron grinders are necessary? The room will be on ground floor over cellar. Also the proportions that are recommended: height of room, kind of skylight, and if an art window in front is desirable or not?—J. G. S.

[11484.]—Bonding of Stone Columns to Brick-work.—A building has a facade with three-quarter stone columns in front. Will a practical mason inform me of the best way to bond or secure these shafts to the wall? Are they not often made quite circular, and built round at the back? If so, should there be any bond? Any particulars as to how stonework is connected to brickwork will be thankfully received by—YOUNG ARCHITECT.

REPLIES.

[11466.]—Spacing Pilasters.—I am exceedingly obliged to "H. G." The straight or curved line was what I wished to know; but also whether a column should be assumed the width of the pilaster, as a pilaster really does but represent a column; which would then make the spacing line a wider circle. On a straight face either column or pilaster space would, of course, measure alike.—STUDENT.

[11477.]—Stone for Window-Sills.—Is it not a pity to suggest Bath stone for window-sills? Why not have white marble, as is so generally used in the United States of America, more particularly in Philadelphia? There can be no possible reason why people should move on in the old ruts of last century now that we have entered upon a new one.—HARRY HEMS.

[11481.]—Working-Class Dwellings.—The Local Government Board have laid down certain rules as to sizes, height of rooms, &c., and approved plans of dwellings under Part II. of the Housing of the Working Classes Act. Direct through ventilation to each room is required. The area of living-rooms is laid down as 144sq. ft., and 96sq. ft. for bedrooms, though 120sq. ft. has been recommended—but there has been a change of opinion on the question. I believe a living-room of 160sq. ft. and a bedroom of 110sq. ft., or, if two rooms, 100ft. and 120sq. ft. respectively, have been adopted. The height of rooms is now fixed at 8ft. 6in., and the width of staircases to 3ft. 6in. as a minimum. But "Q. E. D." had better make inquiries at the offices of the London County Council, as several modifications of the rules have been made. These variations account for the differences noticed by "Q. E. D."—G. H. G.

The famous pair of portraits by Vandyck which were purchased at the sale of the Peel heirlooms last year by Messrs. Agnew for the sum of 21,250gs. have just been acquired from them by the authorities of the Berlin Museum. The pictures, which are masterpieces of Vandyck's Genoese period, were bought for Sir Robert Peel from the Balbi family in 1828 on the advice of Sir David Wilkie; and when Sir Robert's son sold the bulk of his father's collection to the National Gallery these remained the chief ornaments of Drayton Manor. Traditionally known as members of either the Balbi or the Spinola family, the portraits are now believed to represent Bartolommeo Giustiniani and his wife.

The formal opening took place on Wednesday of the new clubhouse of the Bloomsbury Young Men's Club, Queen-square. The new premises have a residential accommodation for 70 or 80 young men, besides club-rooms.

The Bavarian Government has officially applied for permission to carry out excavations at the Temple of Athens, in the Island of Aegina, under the superintendence of Professor Furtwängler, the Director of the Glypto-theke at Munich.

A new transit shed has just been completed at Barry Docks. It consists of a cellar and two floors above. The cellar is divided into three sections. The width of the cellar all through is 154ft., and the length of the three sections is 207ft., 140ft., and 141ft. respectively. The width of the next floor is 156ft., and the length 500ft. The top floor is 171ft. wide, and in addition there is an outside platform to this floor. Hydraulic cranes are provided on the dock side and on the shed floor, and also a number of hydraulic traversers. Bonded stores for wet and dry goods have been built.

A site for the proposed free library for Wavertree has been approved by the Liverpool Corporation, and the city surveyor has been instructed to prepare plans of a building to be erected thereon at a cost not exceeding £7,000.

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ILLUSTRATIONS.

ROYAL ACADEMY PRIZE DESIGN FOR A VILLAGE CLUBHOUSE.—FOUR END LODGE, FORTWORTH.—RESIDENTIAL PLANS, BANGOR.—NEW CONDITIONING HOUSE FOR THE BRADFORD CORPORATION.—THE TRADING OR BRATING HOUSE AT TREDORTH.—TYPES OF CLASSIC IRONWORK.—THE COUNTY HALL, TERRY.

Our Illustrations.

ROYAL ACADEMY PRIZE DESIGN FOR A VILLAGE CLUBHOUSE.

This scheme, by Mr. James B. Fulton, was chosen for the Royal Academy Students' Prize in the S. Leads at Burlington House, the subject set being a tomb suitable for a bishop to be erected in his cathedral church, presumably in St. Paul's, judging from the style adopted and the architecture of its setting. The drawings, reproduced from the prize set, give plans, section, and view; but we have not been favoured by any particulars—possibly because the author may consider that the illustrations speak for themselves.

ROYAL ACADEMY PRIZE DESIGN FOR A VILLAGE CLUBHOUSE.

The following were the official conditions for this competition:—Architectural design of a village clubhouse, with news-room, reading-room, billiard-room, and hall to accommodate 250 people, with caretaker's residence. Cost not to exceed £1,500, exclusive of land, boundary walls, and architect's commission. Prize (given by the Right Hon. Lord Treleagar £10, and a gold medal by the committee. The author of the selected design is Mr. J. V. Henshaw, of Liverpool, who writes "The village hall is so arranged that it can be used without interfering with the working of the club portion. There is a connection between club and village hall. The caretaker's residence, which is placed on first floor, has a private entrance at rear, and gains access to both club and hall. Club or other dinners could be conveniently served, from caretaker's kitchen, in village hall. The billiard-room is shown on first floor. This arrangement allows of greater head-room, and also a top light. The lavatories to club are placed at rear. The cross current of air through cloakroom would prevent any objectionable smell reaching the club portion. The village hall is provided with cloakrooms, and there are also retiring-rooms for performers, with separate entrance and lavatory accommodation. The external walls are intended to be built of hard common brick, and covered with cement rough-cast. The base, dressings to door, and window openings, and copings on front elevation to be of local sandstone. The roofs to be covered with small green Buttermere slates. The windows to be filled in with clear leaded glazing; a few lights on front elevation to open with metal casements. The remaining windows on back and side elevations to have wooden frames and casements.

FOUR END LODGE, FORTWORTH.

FOUR END LODGE is one of three erected for the Earl of Ducie at Fortworth Court, Gloucestershire, from the design of Mr. W. D. Caroe,

architect. The conditions of the case were peculiar, as ground space for the building had to be obtained by quarrying the rock, which was used in the building, from the hillside. For this reason, and also that it might form a convenient watching place, the ground plan was curtailed, and the rooms placed in stories over one another, whence the tower-like appearance, the chimneys being carried up the several angles. The work was carried out by Lord Ducie's estate workmen, under the direction of his agent, Mr. J. J. Harle.

RESIDENTIAL PLANS, SOUTH STREET, MAY VILL.

This building has a red brick and white stone elevation, with balconies overlooking the gardens on the west side. The internal arrangements and accommodation for servants are very complete. Passenger and service lifts to all floors; staircases and landings heated with hot-water coils. A general system is provided for supplying the flats with hot water, so that they are not dependent upon their own kitcheners for a supply. The building has been erected from the plans of Mr. E. Keynes Purchase, F.S.I., architect, of Queen Victoria-street, E.C.; Messrs. Geo. Trollope and Sons, of 77, Grosvenor-road, S.W., being the contractors; and the sanitary works have been carried out by Messrs. Dent and Hellyer, of Newcastle-street, Strand, W.C.

NEW CONDITIONING HOUSE FOR THE BRADFORD CORPORATION.

The most direct link between the staple trade and the municipality of the City of Bradford is the Conditioning House, where Bradford's products are officially tested, and it is satisfactory to find the link, since it was forged in 1891, has steadily increased in strength. The establishment is unique in Great Britain, but there are a number of similar institutions on the Continent. Originally work was started in a building behind the Town Hall. Now the work has completely outgrown the accommodation, and hence the City Council are building extensive premises in Canal-road and Cape-street. The total cost of the new building will be about £33,000, exclusive of site. The new building, which has been designed by Mr. Frederick Wild, architect, of Charles-street, Bradford, will have frontages to Cape-street and Canal-road, the main entrance being in the former thoroughfare. It will consist of two blocks, connected at the front by a range of offices, and the back by gangways; between the two blocks a roadway, covered with a glass roof, is provided for. This roadway will be 30ft. wide, and will be connected with another roadway the same width, leading into Canal-road. The frontage to Cape-street measures 178ft., and to Canal-road 212ft. The design is for a solid substantial building, with the principal front relieved by the symmetrical arrangement of the main entrance and central offices, and also by an entrance archway with massive wrought-iron gates. In depth the building will measure an average of 208ft., whilst one block will be 88ft. wide and the other 60ft. wide. The whole of the Cape-street frontage on the ground and first floor is set aside for offices, which will be reached by entrance doors leading to corridors on either side of main entrance archway. There are complete sets of lavatories, &c., for the office staff, and also for the workpeople on each floor. The rest of the building consists of warehouse and testing-room accommodation. The testing-room is on the top floor, which is fireproof. Provision has been made for the installation of 160 ovens for testing purposes. The new building will have a floor area of about 15,844 square yards. A properly constructed laboratory for testing mixed fabrics will be fitted. In the new building many branches of business which now have to be shirked owing to the lack of means for adequately dealing with them will be developed according to the needs of the trade.

HOUSE AT TREDORTH, NEAR BANGOR.

This house, which has been erected for Mr. Hugh C. Vincent from the designs of Mr. Richard Hall, architect, Bangor, is faced up to first-floor level with a pinkish red sandstone, rock-faced, from a quarry on the estate. The remaining portions are cemented and finished white. The roofs are covered with green slates. Mr. William Parry, of Bangor, was the builder.

TYPES OF CLASSIC IRONWORK.

We give in this number a small selection of illustrations from the paper on this subject read by Mr. T. S. Elgood, of Leicester, on Nov. 9, before the Birmingham Architectural Association, a report

of which we gave on Nov. 16, p. 718. The three very unusual types of railings from Hampton Court and Trinity College, Cambridge are given with intent to show how free and unfettered in their designs were the 17th and 18th century English smiths, though they always retained certain almost undefinable Classic qualities. The Newark example, though very satisfactory in its own way, is quite an ordinary type, and is given as a contrast to the others. Of the beaten leaves, the two from South Kensington Museum (from a pair of table-supports) exhibit some very peculiar and purely English characteristics, while the upper and lower of the three examples from Hampton Court are derived more closely from the acanthus. The volute is one of the finest pieces of beaten work from the celebrated Hampton Court screens. The remaining four examples of leafwork are from the very Classic chancel screen in Notre Dame, Rouen. They are of the utmost beauty and delicacy, every smallest detail being perfectly modelled and exquisitely chased.

THE COUNTY HALL, TERRY.

This building is a large structure in St. Mary's Gate, originally built at the commencement of Charles II.'s reign; but which has been so much altered that very little of the original fabric remains. The stone front, which is set back in a spacious courtyard, is of one story, approached by a broad flight of steps, and is a characteristic specimen of the architecture of the 17th century. A room occupies the whole length of the front, and forms a large and lofty entrance-hall to the modern county-courts at the rear.

R. REGINALD MORTON.

CHIPS.

The annual meeting of the Association of Master Painters of Scotland was held at Aberdeen on Friday. Councillor Dobie, Edinburgh, the president retiring from office, occupied the chair. Mr. Alexander Latto, Aberdeen, was appointed president for next year, and Mr. John Scott, Glasgow, vice-president. In the committee's report it was stated that a general reduction of wages must take place at the end of the current year. Glasgow was fixed for the next annual meeting.

Mr. R. H. Bicknell, M.I.C.E., held an inquiry at the district council offices, Drighlington, on Friday, with respect to a petition for a provisional order empowering the council to put into force the powers of the Land Clauses Act with reference to certain lands required by them in the parish of Tong for purposes of sewage disposal.

At a private meeting of the Leith Parish Council, it has been agreed by a majority of one to purchase Hawkhill grounds, for £15,000, as a site for the proposed new poorhouse. Should this proposal be carried out, the council will not be able to build upon the site for several years, as their borrowing powers are limited to £40,000, and the cost of a suitable poorhouse is estimated at £60,000.

The Local Government Board have sanctioned the loan of £3,432 by the Wallasey Council for the purchase of a site in Leasowe-road, for the small-pox hospital.

Mr. James Ogden, an ex-member of the Rochdale Town Council, has offered £4,000 to the town for a new picture gallery. It is stipulated that the money shall be invested for ten years, and that the Corporation shall spend not less than £200 a year during that period on pictures of merit for the gallery.

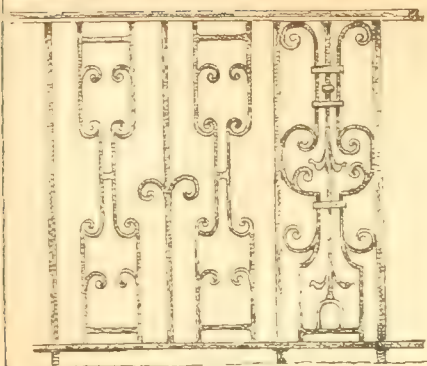
Dulness and inactivity still characterise the proceedings at the Tokenhouse-yard Auction Mart. There were few sales of any importance during last week. The week's total amounted to £36,200 only.

The North-Eastern Railway Company are going to convert their Leeds and Selby Railway between Neville-hill and Crossgates, a distance of two miles and a half, from a double to a four-line railway.

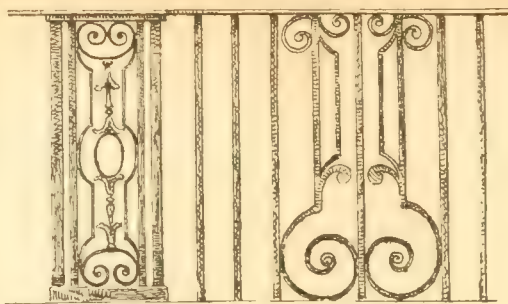
The executive committee in connection with the reconstruction of Glasgow Royal Infirmary have declined to accede to a proposal of the infirmary managers that the latter should bear no part of the financial responsibility if reconstruction is carried out. A sub-committee has been appointed to meet the infirmary managers on the subject.

The Central Conservative Clubhouse is about to be rebuilt from plans by Mr. Barlow, of Manchester, at a cost of about £5,000.

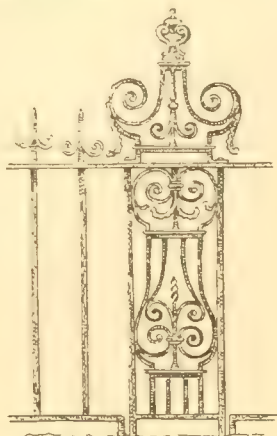
A Local Government Board inquiry was held on Wednesday by Mr. R. H. Bicknell, M.I.C.E., at Liverpool, as to an application for a provisional order necessary to the widening of Church-street and Belmont-road, and the construction of a new street between Great Howard-street at its junction with Leeds-street and New-quay.



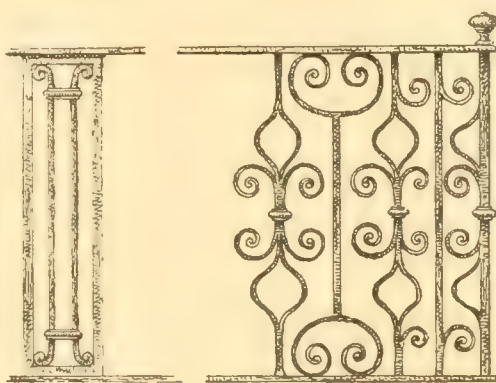
Trin Coll Cam



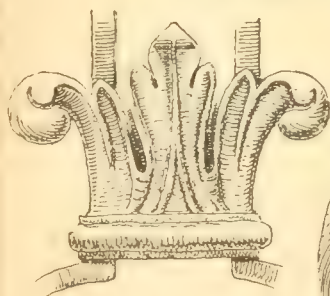
Hampton Court.



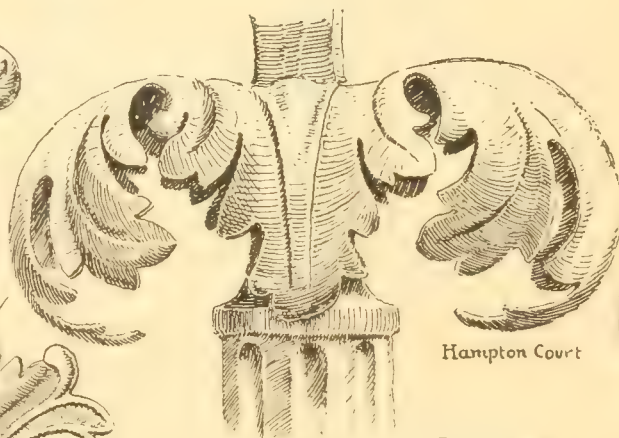
Nenarn



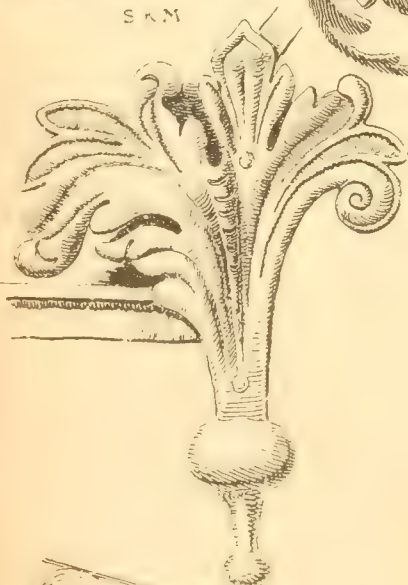
Hampton Court



S.K.M.



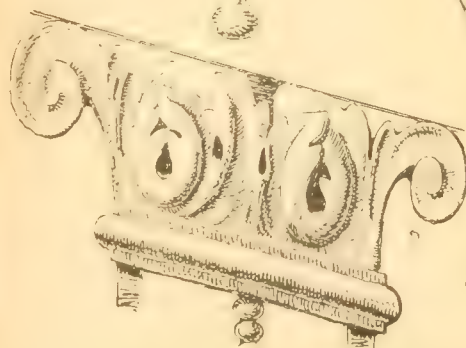
Hampton Court



Notre Dame Rouen
Chancel Screen



Hampton Court



TYPES OF CLASSIC IRONWORK.
DRAWN BY T. S. ELGOOD



THE BUILDING IDEAS, FEB 3, 1901.

HOUSE AT TREBORTH NEAR BANGOR. N.W.

NORTH FRONT.

RICHARD HALL, ARCHITECT.



FIRST FLOOR PLAN

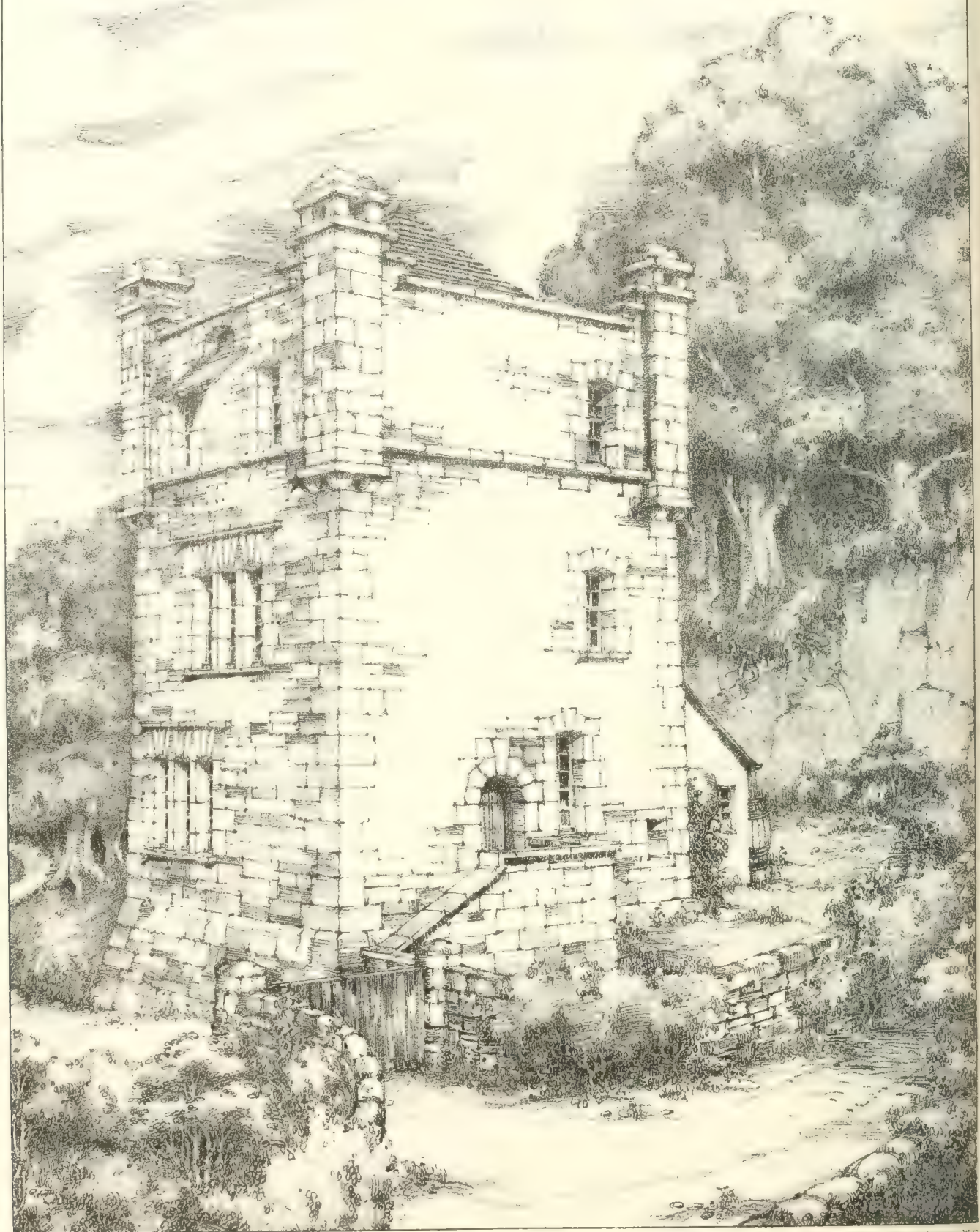


GROUND PLAN

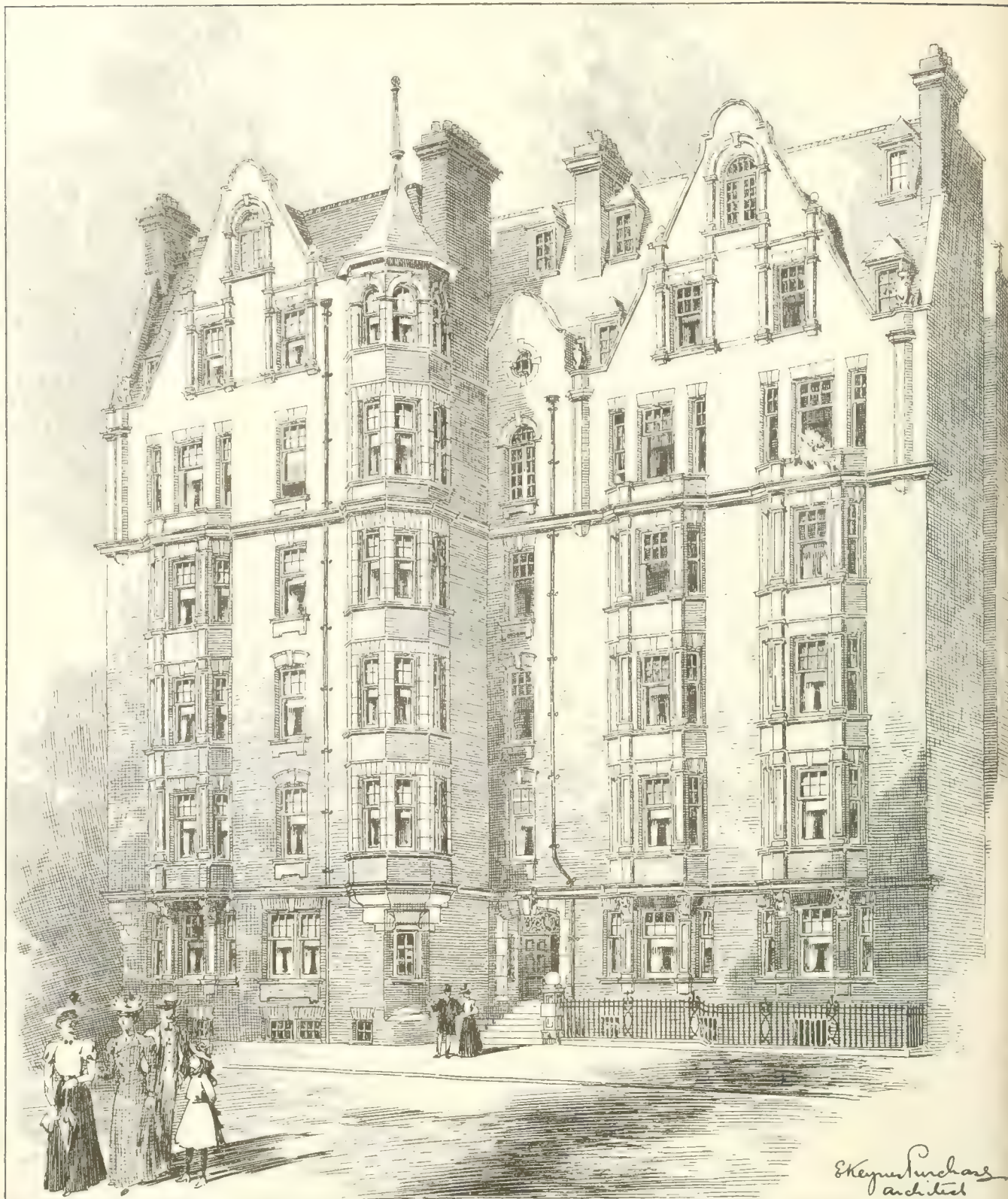




POOR END LODGE
TORTWORTH D.D.D.D.
W.D. CAROE ARCHT



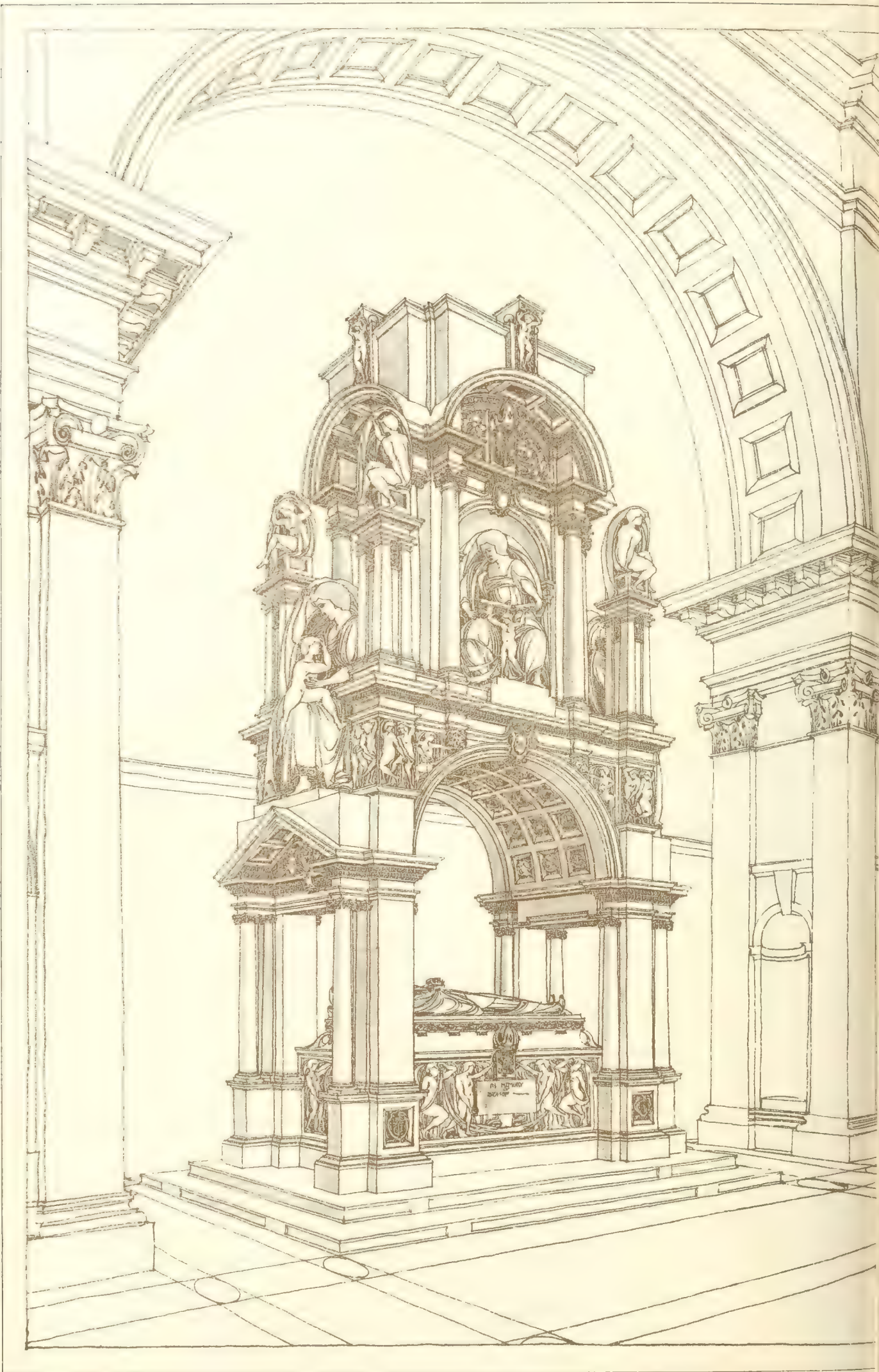


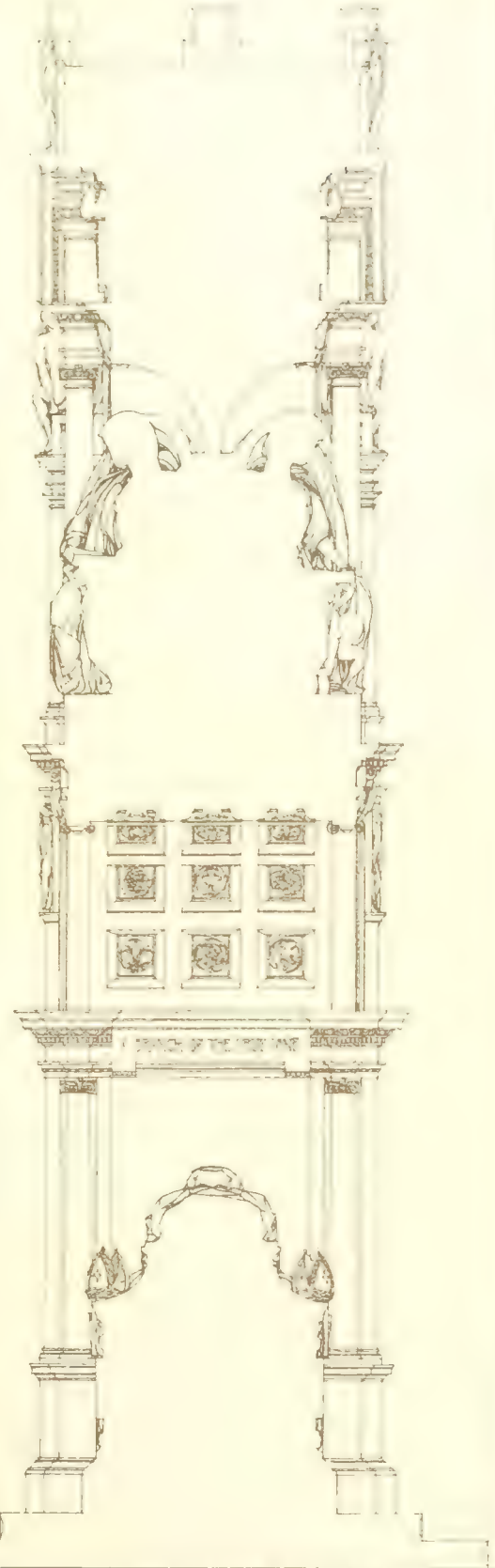


RESIDENTIAL FLATS,
NO. 51 SOUTH STREET,
MAYFAIR, W.









PLAN AT A

W. E. PLAN AT B

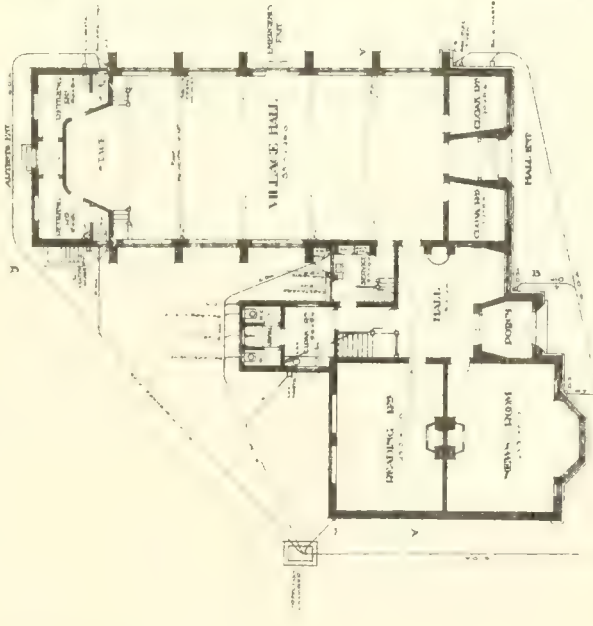
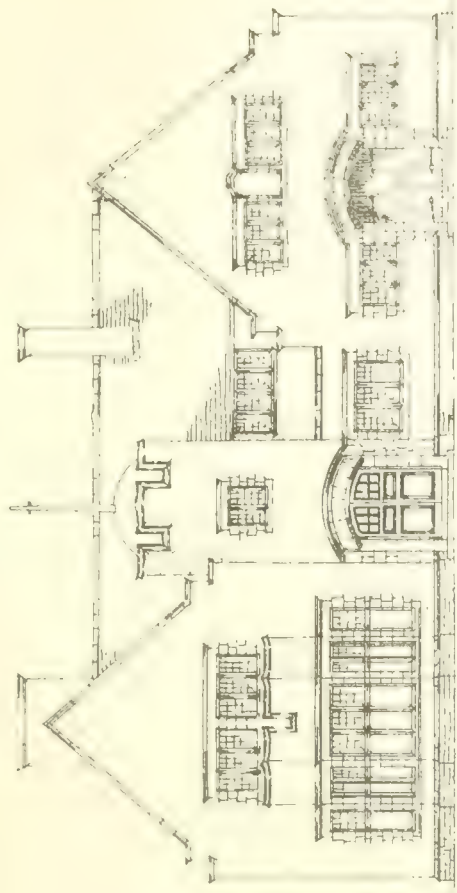
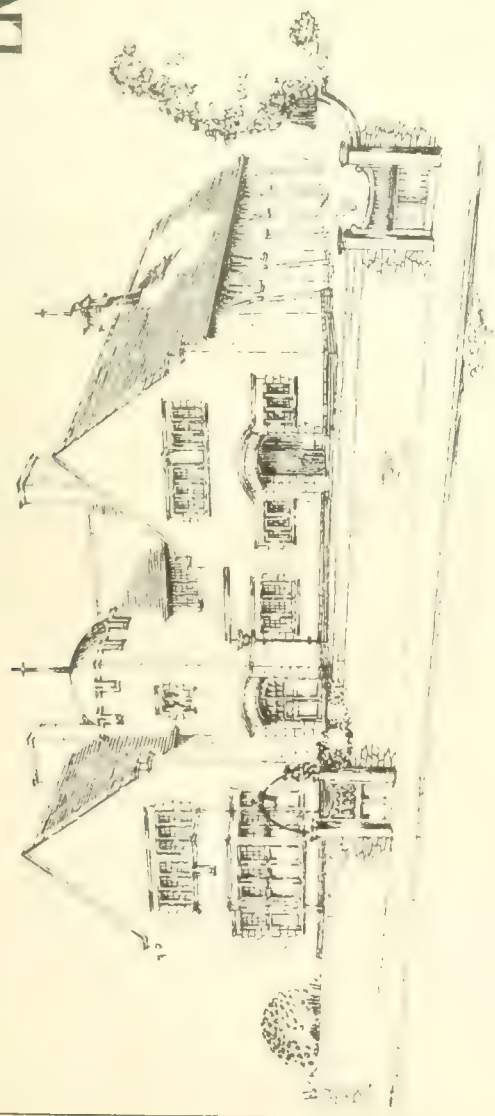


ROCK PLAN



ROYAL NATIONAL EISTEDDFOD LIVERPOOL

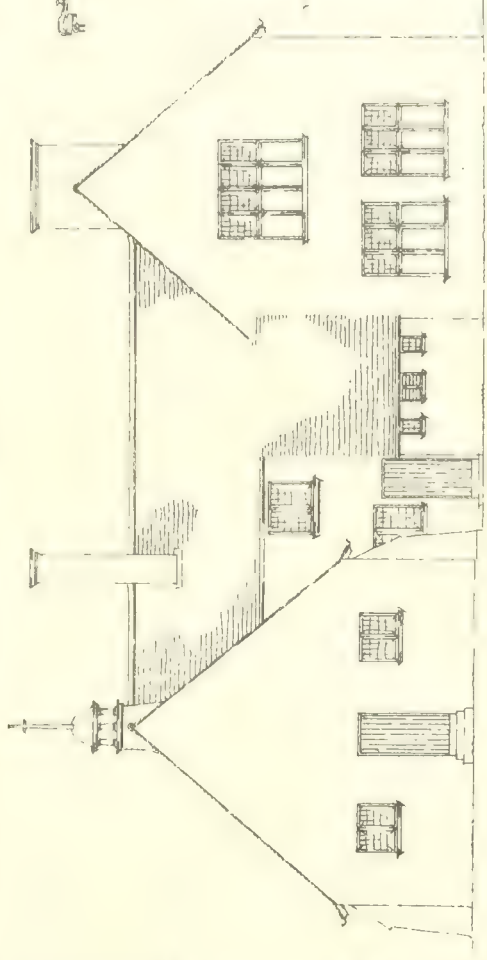
• PRIZE AWARDED TO J. V. HENSHAW •
DESIGN FOR
A VILLAGE •
CLABHOUSE



GROUND PLAN

SCALE OF FEET
10 20 30 40 50 60 70 80 90 100

FRONT ELEVATION



BACK ELEVATION



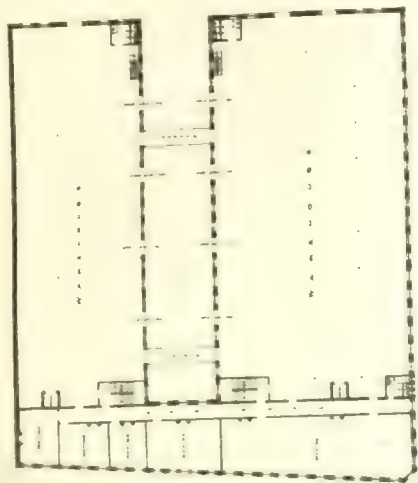
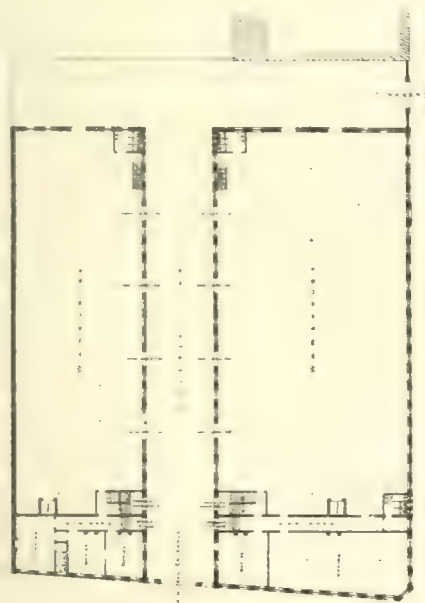
173 F11007 PLAN



NEW YORK: PUBLISHED BY THE ARCHITECT, 100 NASSAU ST., 1897.

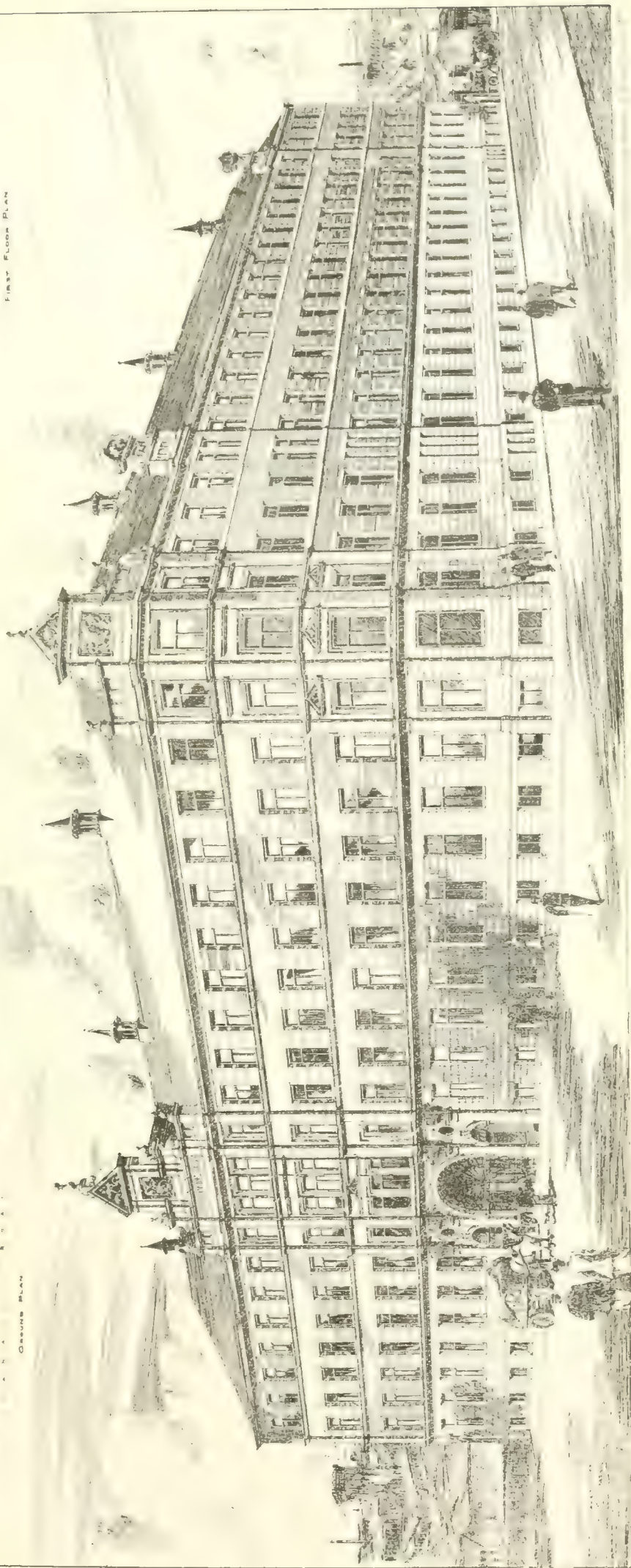
NEW CONDITIONING HOUSE FOR THE BRADFORD CORPORATION

FREDERICK WILD, ARCHITECT.



FIRST FLOOR PLAN

FIRST FLOOR PLAN





GARDEN FRONT.



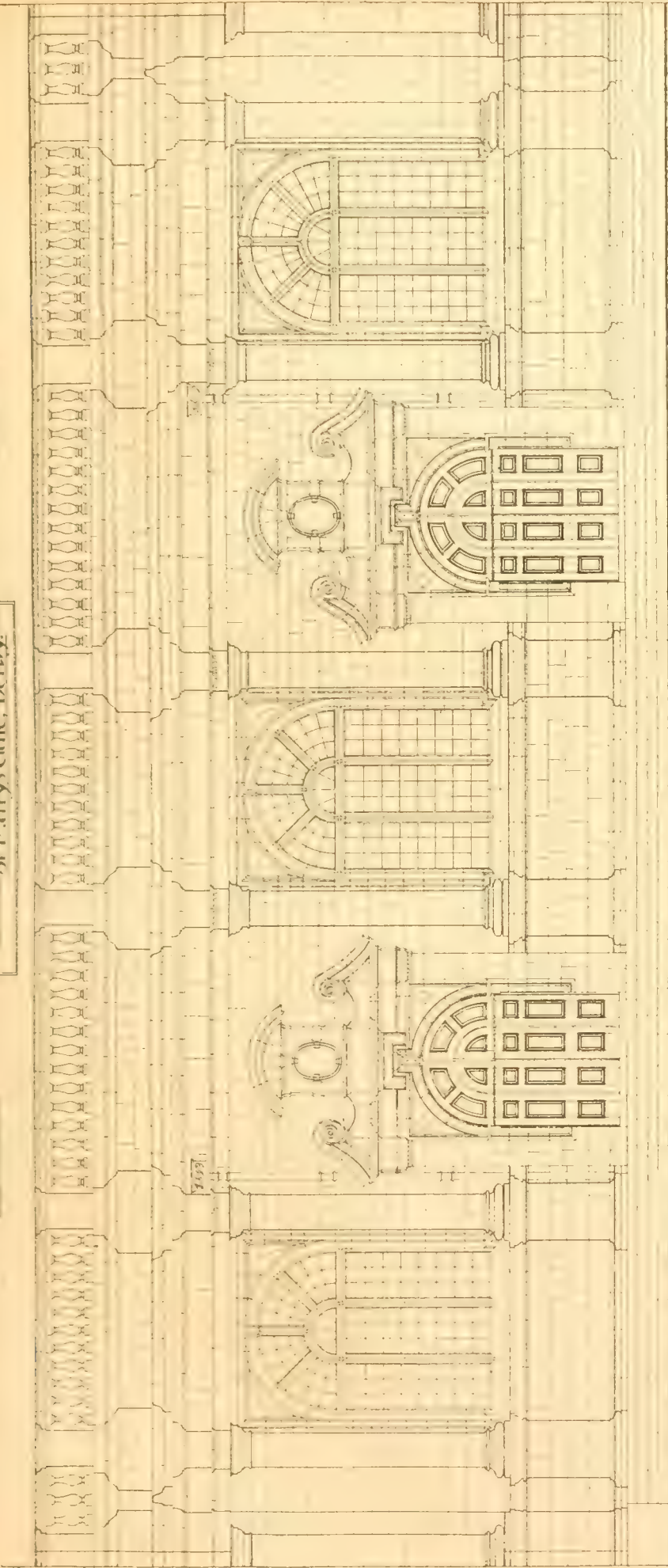
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CHD 1659.

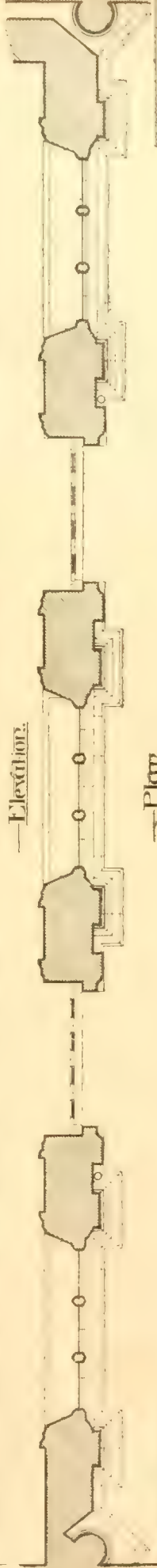
The County Hall,
St Peter's Gate, Derby.

Renaissance



Elevation.

Plan.



Scale of feet.

Designed and drawn by
J. B. Rogers and Partners 1900.

Our Office Table.

The fortieth annual exhibition of the Royal Glasgow Institute of the Fine Arts, which was opened on Monday, contains about 800 exhibits. Among the loan pictures are the Hon. John Collier's portrait of Rudyard Kipling; "Miss Ellen Terry as Lady Macbeth," by J. S. Sargent; "Love and Death," by G. F. Watts; and Colin Hunter's "Atlantic Waves." The work in black and white includes several portraits, the most notable being that of Queen Victoria, while other well-known persons depicted are Lord Cromer, Mr. and Mrs. Asquith, Mr. Cecil Rhodes, Lord Charles Beresford, and Mr. Paderewski. Among the 50 pieces of sculpture are two by E. Onslow Ford; a bronze by J. Tweed, "Maternity"; a plaster bust by the Countess Gleichen; one of the late Rev. Dr. A. K. H. Boyd, by D. W. Stevenson, and cases of works by Alfred Gilbert and Gilbert Marks.

An extraordinary disaster occurred in Buckie in the early hours of Friday morning, when Buckieburn Bridge, which was only on the previous Tuesday night formally named by the Buckie Town Council the Queen Victoria Bridge, in memory of the late Queen, tumbled into a mass of ruins. The structure was just on the point of leaving the hands of the contractors—Messrs. Stuart and Sons, Peterhead. The two central piers of the bridge, built of masonry hearted with concrete, 6ft. 6in. broad at the base, tapering to 4ft. 6in. at the springer, gave way under the strain of a heavy gale. The three arches of 25ft. and one of 34ft. fell bodily into the valley 40ft. below, snapping off at the granite pilasters and leaving a gulf 100ft. wide. The ruins, consisting of bricks, scaffolding, granite blocks, concrete, stones, and sand completely choked up the narrow valley, and dammed back the burn, which was in flood. A month ago the town council decided to add 3ft. extra height to the superstructure, and after being approved of by the consulting engineer, Mr. Barnett, C.E., Aberdeen, this had just been done when the disaster happened. The roadway was 45ft. wide. Each of the smaller arches was circled with three rings of brick, a coating of 6in. of cement being laid over all. The central span had four rings of Peterhead granite. After discussion, the town council have unanimously agreed to ask Mr. Barnett, C.E., to come and inspect the ruins of the bridge, and advise the town council as to the causes which had led to the disaster.

A SPECIAL report is about to be presented to the city council of Manchester on the administration of the city surveyor's department. The committee state that, after careful investigation, they are of opinion that this department has outgrown its capacity for management; and that it would be to the advantage of the corporation if a division of the work were effected, and the architectural work absolutely separated from the city surveyor's department. There would still be a very large amount of work remaining under the city surveyor's control. It would be a growing quantity, including the charge of sewers, paving, streets, dangerous buildings, rivers and bridges, preparation of plans for Parliamentary purposes, and the examination of all plans submitted by railway companies and other authorities. For the smooth and successful working of the architectural section of the department, the committee are convinced that it is desirable to establish a separate architectural department for the city. The town-hall committee, therefore, ask to be empowered by the council to consider and report as to the future arrangements and best means of effectually providing for a new department which shall have the control of the architectural work of the corporation and the entire management of the architectural surveyor's work, which would involve the taking of quantities and making final measurements in regard to architectural works, the examination of all plans for buildings, examinations as to their conformity to the building regulations, and other matters closely allied to this work.

MR. THOMAS WILKINSON WALLIS, of Louth, Lincolnshire—perhaps the most wonderful carver in wood the world produced in the century just past—celebrated his 80th birthday anniversary upon the 4th, having been born, the son of struggling but honest parents, at Hull upon February 4, 1821. He first came well to the fore in the Great Exhibition of 1851, when his

wonderful studies in still life, mostly in lime-tree, were admittedly the most beautiful ever seen. Grinling Gibbons's best existing works are a long way behind those of Wallis's. Close application to his work caused him to almost lose his sight in later years, and he was, perforce, obliged to follow other engagements. He was an earnest and effective Volunteer, ultimately retiring as quarter-master sergeant with the long-service medal. In 1899 he published a most interesting and instructive autobiography, being extracts culled from a journal kept for 60 successive years. He is by no means an unskilled artist in oils, and still occupies his leisure hours in painting, mainly portraits, in which he pre-eminently excels. We trust many years of health and strength are before him.

A LECTURE on "The Taxation of Land Values" was given on Friday last before the Economic Section of the Philosophical Society of Glasgow—Mr. John Mann, jun., presiding—by Mr. John A. Todd, B.L., writer, Glasgow. This was the second paper read on the same subject before the society by Mr. Todd. The former address was in effect a hostile criticism of the Glasgow Bill on the subject, and this second paper was what the lecturer considered a more reasonable and moderate method of taxing land values. His proposal was that vacant land in burghs should be entered in the Valuation Roll, not as at present at its actual rental, which was merely nominal, but at its reasonable feuing value, and should pay owners' taxes upon that value. By the term "vacant land" he meant land available for building purposes at present unoccupied by buildings, or only occupied by buildings of which the actual yearly rental, in terms of the Valuation Acts, was less than its reasonable feuing value. He suggested, further, that in ascertaining whether land was available for building purposes, the assessor should consider the nature, condition, and position of the land, and the extent of, and demand for, it in the district. In fixing the reasonable feuing value of any vacant land, the assessor should, as far as possible, be guided by any particulars known to him of any offer made by an intending feuar for such land in similar districts, and whether such offers had been accepted by the proprietors. This proposal, he thought, would go far to meet the views of the more moderate of land reformers, who would not countenance appropriation of private property. It would bring them nearer to a solution of the crux of the question, whether valuation could be made of urban land apart from buildings; and it might show the extreme land reformers that a deal of good could be done without resorting to the drastic measures which they thought necessary.

A BILL was introduced into the Legislature of New York State on Jan. 22 prohibiting any person to practise as a mason, builder, or general contractor in New York City, except he is duly registered by the county clerk. In order to get a certificate he must pass an examination showing that he has passed an apprenticeship at brick-laying, masonry, or carpentry, of at least four years, or is a duly certified civil engineer of at least five years' experience in the construction and erection of buildings. An examining board, to be appointed by the mayor, and to consist of a practising architect, a civil engineer, a carpenter, a mason builder, a practical bricklayer, and the commissioner of buildings, shall receive a compensation of 25dol. for each sitting. The person registering is to pay a fee of 20dol. Licenses are to be forfeited for violation of the building laws.

THE leakage into sewers has been studied in Massachusetts by Mr. X. H. Goodnough, chief engineer of the State Board of Health. In a recent report on the discharge of sewage into Boston Harbour, he states that observations show that the leakage varies considerably in quantity in different seasons of the year, being greatest in the spring when the ground-water is highest. Records of the flow in recently constructed sewers, aggregating about 137 miles in length and from 8in. to 36in. in diameter, show that the average leakage into them before any connections were made amounted to 40,000 gallons per mile of sewer. Some of the measurements were made in the spring and others in drier portions of the year. Records of the flow of sewage in about 700 miles of sewers in Massachusetts cities and towns indicate that the leakage into a large system may amount at times to as much as 80,000 gallons per mile, and in future work it is recommended that provision be made for such an amount. In those

Massachusetts communities where the land is now nearly all occupied and where portions of the territory are densely populated it is found that the population per mile of sewer averages about 800 or 1 per 100 gallons leakage.

MEETINGS FOR THE ENSUING WEEK.

- MONDAY.—Society of Arts. "The Bearings of Geometry on the Chemistry of Fermentation." Cantor Lecture No. 1, by W. J. Pope. 8 p.m.
Surrey's Institution. Discussion on "The Future of the London Water Supply." 8 p.m.
Bristol Society of Architects. "Church Restoration," by C. H. Samson, F.R.I.B.A. 8 p.m.
- TUESDAY.—Society of Arts. "Recent Advances in Pottery Decoration," by William Burton. 8 p.m.
Institution of Civil Engineers. Discussion on "The Present Condition and Prospects of the Panama Canal Works"; and paper to be read, "The Nilgiri Mountain Railway," by Walter James Weightman, M.Inst.C.E. 8 p.m.
- WEDNESDAY.—Society of Arts. "Arsenic in Beer and Food," by William Thomson. 8 p.m.
Institution of Civil Engineers. Students: Inspection of the Engineering Models at the Victoria and Albert Museum, South Kensington. 2.30 p.m.
Sanitary Institute. Discussion on "The State of Our Streets," to be opened by Thomas Blashill, F.R.I.B.A. 8 p.m.
- THURSDAY.—Society of Arts. "The Greek Retreat from India," by Col. Sir T. Hungerford Holdich, K.C.I.E., C.B. 4.30 p.m.
- FRIDAY.—Architectural Association. "Gothic Architecture and the Basis of its Beauty," by E. S. Prior. 7.30 p.m.

THE ARCHITECTURAL ASSOCIATION. FEBRUARY 15th. ORDINARY MEETING at No. 9, Conduit Street, W. 7.30 p.m. MR. E. S. PRIOR on "Gothic Architecture and the Basis of its Beauty."
FEBRUARY 16th. FIRST SPRING VISIT to the Roman Catholic Cathedral and Convent of the Holy Name at Weymouth, Dorset, by permission of the Architect, Mr. F. B. Bantley. Members to produce their passes for the current season, and to meet at the building at 4.30 p.m.
G. B. CARVILL, Hon. Sec.
R. S. BALFOUR.

Approval has been given for the erection of a new Medical School and Pathological Institute and Laboratories at Netley. The building will be lit with the electric light, and probably the main hospital building will also be lighted in this manner in the near future.

A tower is about to be added to the important Roman Catholic Church of the Holy Name at Manchester.

Mr. Henry Drew, of Exeter, has been appointed by the Board of Trade to value a portion of the seashore at Weymouth, amounting to about 40 acres, which the Great Western Railway desire to acquire in order to carry out some important harbour works.

The Town Council of Exeter on Monday appointed Mr. Thomas Spooner Picton as borough surveyor, at a salary of £250 a year.

At the last meeting of the Society for the Encouragement of the Fine Arts, held at 9, Conduit-street, W., Dr. Phené in the chair, a lecture on "Greek Architecture," illustrated by lantern views from photographs, was delivered by Mr. R. Phené Spiers, F.S.A.

The urban district council of Wrotham, Kent, have instructed Mr. H. P. Monckton, architect, of London, to prepare plans for 25 cottages to be erected in three districts, at an estimated cost of £6,000.

Mr. G. W. Rogers, A.M.I.C.E., has resigned his position as surveyor to the urban district council of Spennymoor, and Mr. W. Curry, urban district council surveyor, Droylsden, Lancashire, has been appointed his successor.

At the last meeting of the Acton District Council it was decided to increase the salary of the surveyor, Mr. D. J. Ebbetts, A.R.I.B.A., from £500 to £600 a year, the increase to commence with the financial year of the urban authority. Plans have lately been prepared by Mr. Ebbetts for new public baths for the district, and he was the author of the fire station erected a few years since in High-street, Acton, and the parish mortuary was lately completed from his plan.

At the 48th annual meeting of the subscribers to the Leeds Hospital for Women and Children, held on Friday, it was decided to proceed with the erection of new buildings to adjoin the present institute and provide 50 beds, in accordance with plans prepared by Mr. J. W. Connor, F.R.I.B.A., of Leeds, which have been approved by the consulting architect, Mr. Alexander Graham, F.S.A., of London.

LEGAL INTELLIGENCE.

WHAT IS "BLUE LIAS LIME"?—BLUE LIAS ASSOCIATION v. CAEN PORTLAND CEMENT CO. At the Westminster Police-court on Wednesday last, before Mr. Horace Smith, the adjourned hearing of this case took place. The plaintiff company sought to obtain an injunction against the defendant company to prevent the latter from terming their output "blue lias lime." Mr. Wills, barrister, appeared for the plaintiffs, and Mr. Horace Avery, K.C., for the defendants. The opening of the case, which took place a week previously, was reported in our last issue, p. 176.—James Wellton Troughton, solicitor's clerk, in the employ of Messrs. Parker, said he went to Formby's Wharf, Grosvenor-road, S.W., on the 8th Jan., for the purpose of taking a sample of lime from the sacks said to have been purchased of the defendants. The sack bore the defendants' trade mark. He handed the sample to Mr. Bertram Blount, analyst.—Bertram Blount, of the firm of Stanger and Blount, consulting chemists and analysts, Broadway, Westminster, said he was analyst to the Admiralty, and had made a special study of cements. It was possible to test whether lime was made from blue lias limestone. He had examined the sample handed him by the last witness, and concluded, from chemical and mechanical tests, that it was not derived from blue lias limestone. Lime made from a genuine blue lias rock contained so much lime that it could be slaked. Hydraulic limes possessed this quality of slowly slaking. There were certain marly limes which set like cement, and did not slake, heat, or crumble. Chemically, the lime made from blue lias contained a larger proportion of lime (Ca) than that derived from marl. Ultimately, after the slaking process, blue lias lime set very slowly, gradually, and safely without cracking. "Blue lias lime" was a definite term among analysts and engineers. The sample in question contained 54.4 of lime and 20.8 of silica, whereas the average composition of blue lias lime contained 70 per cent. of lime and 12 per cent. of silica. Cross-examined: Was not a geologist, and did not know that there were five strata of blue lias, nor that they varied very much in the amount of carbonate of lime and silica they contained. In a report witness made some time since on the constituents of blue lias lime, he had quoted 65 per cent. as the typical proportion of lime and 15 per cent. of silica; the material varied, of course, to some extent. Witness made analyses of four samples of lime sent to him in the report produced, but knew nothing of the origin of the specimens. No. 2 was a very bad specimen; he did not know that it came from Messrs. Chas. Nelson and Co.'s quarries. Nor did he like No. 4, said to come from the quarries of Messrs. Greaves, Bull, and Lakin. The quarries contained alternate layers of shale and lias limestone, the former being worthless, and the latter of commercial value, and it was necessary for the workmen to exercise care in separating the two materials and rejecting the shale. Re-examined: Shale contained the same elements as blue lias, but in a useless proportion. Manufacturers took great pains to separate the two substances. The samples referred to in cross-examination were bad samples, and witness should condemn them.—George Frederick Daeon, member of council Inst.C.E., had been in practice since 1869, and as borough engineer for Liverpool designed and carried out the Vyrnwy reservoir, for the supply of that city with water, and which was the largest in Europe. As the result of experiments with limes, witness had for many years used blue lias lime in preference to Portland cement. Blue lias lime was known before Portland cement, and signified hydraulic lime burnt from the Lower Lias formation. Other hydraulic limes not of the blue lias formation were known, such as the Halkyn lime from Flintshire, which was carboniferous in character. The different beds of blue lias differed considerably, and were all more or less hydraulic in character. For certain classes of work no formation had such valuable properties as blue lias, and it was frequently specified by engineers. Other hydraulic limes were found in pockets, which possessed similar qualities; but they were not widely distributed as was the great outcrop of blue lias formation. Witness had never obtained blue lias lime from Cambridgeshire, and believed it was impossible. The nearest outcrop of blue lias to Mel-dreth, near Royston, was about fifty miles distant. To give the name "blue lias lime" to other materials would be most unfortunate, as it would involve long investigations of the qualities of the sample submitted. Witness had made between 3,000 and 4,000 separate tensile tests of blue lias. Cross-examined: Blue lias contained very many varieties of rock, all of which differed a little in the proportions of constituents. Witness should never rely on any chemical analysis alone. There were strong and weak lias limes, just as with Portland cements. The fact that a lime was derived from blue lias was a guarantee that it would set slowly. The three essentials for practical purposes were ultimate strength, slowness in setting, and hydraulic properties. Witness would not accept Halkyn lime if he had specified blue lias lime; but if a contractor

came and stated that he could get it much cheaper than blue lias, he should not reject Halkyn if it answered the particular purpose of the contract. It took twelve months to ascertain the ultimate tensile strength of a lime, and so he needed to specify the formation. Re-examined: Did not think it possible to have such great varieties of blue lias lime as from 90 to 34 per cent., for in that case it would show greater variations in with-standing tests than was the case. Its constant qualities made blue lias lime valuable for certain engineering works—and for that reason it was generally specified. Witness would not accept a lime from another formation in place of blue lias, even if the proportions were similar, as shown by analyses. Witness had seen two analyses, showing similar chemical qualities—one a blue lias, the other a quick-setting artificial cement of totally different character.—Sir Douglas Fox, past-President of the Institution of Civil Engineers, had had great experience in railway tunnelling—had had large experience in the use of blue lias lime, and when he specified that material he insisted upon having it. The object of using blue lias lime in tunnel work was because of its slow-setting qualities, and lime derived from marl and clunch had not been so well tested, and he should not accept this as equal to blue lias. Cross-examined: Witness often specified blue lias as to come from a particular locality, and was very fond of stipulating that it came from Barrow-on-Soar. He had found blue lias lime very regular in composition, and had had it tested chemically by the witness, Mr. B'ount.—Witness had no doubt badly-sorted blue lias could be obtained, but he would not accept such.—William Gregory, surveyor and estimator, in the employ of Bywater and Sons, builders, and previously with William Shepherd, of Bermondsey: Blue lias lime was a uniform term signifying that burnt from the lower beds of formation. It would not apply to that obtained from marl or clunch. The latter limes were 2s. to 3s. cheaper per ton.—Frederick Thos. Mullett, surveyor, of London and Cambridge, was very well acquainted with the term "blue lias lime," which was restricted to lime from Lower Lias beds in the counties of Warwick, Leicester, and Notts. Witness never heard of blue lias being found in Cambridgeshire, but a hydraulic lime was made in the county. There was a "chalk lime," a fat lime, and another quality made from the stone beds of the chalk, and this was known as "stone" or "clunch" lime. The Cambridgeshire material ought not to be called lime at all: it set quickly, and acted like a cement in not crystallising. Cross-examined: If witness had specified blue lias lime he would not accept it unless it came from Warwickshire or Leicestershire, and within the last seven years from Nottinghamshire. Until the last seven years Notts blue lias was not generally known. Other beds of blue lias would be known by local names, as the "Hanham" which came from the place of that name, near Bristol. Witness had not known that blue lias lime had been made and sold in Cambridgeshire for fifteen years past.—Alfred William Redding, builder, head of the firm of Redding and Son, Cambridge, said he had used a large quantity of hydraulic lime during thirty-five years' experience, derived from chalk and clunch. Witness had never heard the term "blue lias lime" applied to local limes until now, and never heard of its being made in Cambridgeshire from imported blue lias stone. Cross-examined: Witness had never known blue lias stone which was not hydraulic in character. Witness had no experience of lime from Lyme Regis.—Alfred William Swann, lime-burner, Cambridge, general manager of Swann Brothers, Limited, said he made lime from clunch, and called it grey-stone lime.—This completed the case for plaintiffs, and the hearing was adjourned until Monday week, the 18th inst.

FAILURE IN THE LIVERPOOL TIMBER TRADE.—A meeting of the creditors of William Pierce and Edward G. Watts, trading under the style of Pierce, Watts, and Co., as timber merchants, at Regent-road, Liverpool, was held on Jan. 28, at the offices of the Official Receiver, Victoria-street, Liverpool. It was stated that the gross liabilities amounted to £129,371 5s. 11d., of which £94,955 was expected to rank for dividend. The total assets were said to amount to £28,247 19s. 5d., and the deficiency to £66,766 7s. 3d. The largest creditor is the Bank of Liverpool, for £17,421, but against that they hold securities of considerable value. Among the unsecured creditors are two firms which each claim over £13,000. It was reported that the debtors had no offer to make, and thereupon it was resolved that the estate should go into bankruptcy. A chartered accountant was appointed trustee of the estate, with a committee of inspection. The sitting for public examination took place before Mr. Registrar Bellringer at Liverpool on Monday. Replying to the Official Receiver, Mr. Watts, one of the partners, said the firm was started in May, 1899, Mr. Pierce bringing in £20,000 of capital and himself £2,300. The first year's trading showed a loss of £5,911, and every subsequent year showed further losses, ranging from £17,281 to £499. Despite this, the partners' draw-

ings in that period were Mr. Pierce £18,504, and Mr. Watts £11,550. On December 31, 1899, the debit balance against Mr. Watts was £31,364, and against Mr. Pierce £14,569, making altogether £45,935. Both partners then got tired of seeing the reappearance year after year of debit balances, and they instructed the bookkeeper to carry the amount to suspense account, which was done. In 1895 a branch firm at Fleetwood was reconstituted with two new partners, the sons of Mr. Pierce and a Mr. Grimsshaw. The object was to provide an opening for the two young men and give them a start in life. It was not started for the purpose of drawing accommodation bills, but witness admitted that such became the practice. In July, 1898, the Fleetwood firm stood as creditors of the Liverpool firm to the extent of nearly £17,000, but that amount was reduced afterwards, and within the last six months it had been brought down to as little as £1,237. The Official Receiver suggested this had been done at the expense of other creditors and in view of approaching failure. This, however, the witness would not admit. Mr. Pierce, the other partner, gave general corroboration of Mr. Watts's evidence, after which the examination was adjourned.

IS A WEIGHING-MACHINE SHELTER A "BUILDING"?—In the King's Bench Division recently, the cases of the Mayor, &c., of Southend-on-Sea v. Archer and same v. Romanis were heard together before Mr. Justice Bruce and Mr. Justice Phillimore. The first was an appeal by case stated from the decision of justices of Southend-on-Sea dismissing an information preferred by the appellants' town clerk against the respondent, charging him with unlawfully erecting a new building—to wit, a weighing-machine house, without causing such building to be inclosed with walls constructed of good bricks, stone, or other hard and incombustible materials, properly bonded and solidly put together, contrary to No. 11 of the by-laws in force within the borough with respect to new streets and buildings. The structure in question was erected as a shelter for a large weighing machine on the Western Esplanade on the sea front in the borough. The erection was used only during the summer months, and could readily be moved, being made in sections for that purpose. The structure measured 10ft. 4in. by 7ft. (exclusive of projecting steps 1ft. 8in. wide), with a height of 10ft. in front and 8ft. 6in. at the rear. It consisted of wood framing closely boarded with matchboarding on all four sides. It had an opening 7ft. wide in front, which was open during business hours; but closed at night with wooden shutters and secured by bolts inside. There was a door on the east side which was locked at night. It had a wooden floor close-boarded and placed on sleepers or joists, and the roof was constructed of wood covered with felt. Inside the structure there were a large weighing-machine, a small table, two chairs, and some hat-pegs. There were no sanitary arrangements, and no provision for artificial lighting or for heating. The structure was not fixed to the soil, and had no foundation other than the wooden floor joists resting in the ground. During the summer season the structure was open daily between the hours of 8 a.m. and 7 p.m., or thereabouts, and was visited by persons using the machine, the respondent being in charge. It was securely closed at night, the weighing machine and other articles being inside, but no person remained on the premises. The appellants contended that the object of the power of making by-laws conferred by section 157 of the Public Health Act, 1875, was to prevent the erection of wooden buildings or buildings of combustible materials in unfit situations; that the by-laws in effect prohibited the erection of new buildings of wood, except such as were exempted therefrom; that the structure in question was not an exempted building, and that it was a new building within the scope and meaning of the by-laws. "Stevens v. Gourley," "Richardson v. Brown," and "Leicester Corporation v. Brown" were cited. On behalf of the respondent it was contended that the structure was not a building or new building within the by-laws; and that it had none of the features or uses with respect to which the corporation had power under section 157 of the Public Health Act, 1875, to make by-laws. The justices held upon the facts that the erection in question was one of an entirely different character to those dealt with in the decision of "Stevens v. Gourley" and "Richardson v. Brown," and that the power given by section 157 of the Public Health Act, 1875, to make by-laws, and the by-laws made thereunder, did not purport to deal with erections of a temporary nature and use, and that the building was therefore not a new building within the meaning of the by-laws. The question for the Court was whether the justices were right in so holding. In the second case the structure in question was erected by the respondent, for the purpose of being used during the summer months for the sale of light refreshments, on land immediately in front of the Castle Hotel in the borough on the sea-front. The respondent was in the habit of erecting the structure at the beginning of each season, and taking it down at the end of the season, the structure being built

in sections for that purpose. It measured 8 ft. 6 in. by 6 ft. 11 in., with a height of 7 ft. 5 in. It consisted of wood framing, closely boarded with 1/2 in. match-board on all four sides. The front was movable, and was taken down during business hours and closed and locked at night. It had a wooden floor, close-boarded and fastened to its sides, and a roof of canvas or calico securely fixed on wooden cross-pieces and fastened down all round. Inside it had shelving and a counter, and goods placed on shelves. There were no sanitary or drainage arrangements, and no provision for artificial lighting or for heating other than for an urn for making hot water. It simply rested on the ground by its weight without being fixed to the soil, and had no foundation or chimney. At night it was securely fastened up, but no one remaining on the premises. The justices held that this erection was not a new building within the meaning of the by-laws, and dismissed the information. Section 157 of the Public Health Act, 1875, provides that every urban authority may make by-laws "with respect to the structure of walls, foundations, roofs, and chimneys of new buildings for securing stability and the prevention of fires, and for purposes of health." Mr. Macmorran, K.C., appeared for the appellant. In addition to the cases above referred to, he cited "Fielding v. Ryall Improvement Commissioners" (3 C.P.D., 273); "Slaughter v. Mayor, &c., of Sunderland" (60 L.J., M.C., 91); "Watson v. Cotton" (5 C.B., 51); "L.C.C. v. Pearce" (1892, 2 Q.B., 109). The respondents in neither case were represented. The Court dismissed the appeal in each case. Mr. Justice Bruce said that he had come to the conclusion that neither of the erections was a building within the Public Health Act, 1875, and the by-laws made thereunder. With regard to the first structure, the smallness of its size, coupled with the fact that it was not a building adapted for habitation, showed, he thought, that it was not a building, but merely a cover for the weighing-machine. The justices had come very near to finding that it was not a building, and the Court could not hold that the erection was a building. The cases which had been cited were all distinguishable. In "Stephen v. Gourley," the parties themselves to the agreement in that case described the building as a house, and it was held that it did not cease to be a house because it was made of wood. In "Richardson v. Brown" the erection was a wooden structure, in all respects a building, except that it was on wheels. The Court held that that fact did not prevent it from being a building. In "L.C.C. v. Pearce" the structure was used by a builder as a pay office, and was similar to the present structure, and it was held not to be a building. If the first structure was not a building, still less so was the second. It was a mere booth, cover, or shelter, or a pavilion for refreshments, and was not, in his opinion, a building within the Act or by-law. Mr. Justice Phillimore said that he was of the same opinion. Whereas in "Richardson v. Brown" the justices thought that the structure was a building, in the present case they were near finding that it was not. As regards the second case, there was no difficulty. One might as well call a pavilion or a kiosk a building as the structure then in question. He was therefore of opinion that neither of the structures was a building within the Public Health Act or the by-laws.

GLASGOW RAILWAY ARBITRATION CASE.—There has recently been opened in the Central Hotel, Glasgow, a three-days arbitration in regard to a claim by Messrs. Aird and Coghill, printers, Glasgow, against the Caledonian Railway Company for £15,000 as compensation for the compulsory removal of the firm from their business premises in Argyle-street, owing to the operations in connection with the extension of the central station. Sheriff-Substitute Balfour acted as overseer, and the arbitrators were Mr. W. R. Copland for the claimants, and Mr. Thomas Binnie for the railway company. Mr. Steven, of Messrs. Smith and Steven, acted as clerk and assessor. The arbitrators reserved their award.

IN RE J. C. COOK, OF BATH.—At Bath County-court, last week, before his Honour Judge Gwynne-James, John Cornelius Cook, a builder and contractor, living in the Triangle, Oldfield Park, Bath, was brought up in custody as an absconding bankrupt for his public examination. The debtor disappeared suddenly just before the August Bank Holiday, having left his wife a letter, which pointed to his having committed suicide, while his hat and umbrella were found on the bank at the side of the canal a mile or two out of the city. The County-court officials, however, effected his arrest recently at Lewisham, where it was stated in court he was trading under the name of Hunt. He had disguised himself by shaving off his whiskers. Debtor would not admit that he left to evade examination. He thought he was gone off his mind at the time. It seemed like a dreadful dream. In the course of the examination it was alleged that the debtor had sold properties he had mortgaged two or three times without paying off more than the first mortgage, and in this way had received £220 on one

property he sold for £180. The examination was adjourned for the production of a cash account and other particulars, and the debtor was released from custody, the Judge warning him that if he failed to appear at the next court it would be a very different thing. He further advised him not to play any more tomfoolery.

ACTION FOR SPECIFIC PERFORMANCE.—**WOLVERHAMPTON CORPORATION v. ENMONS.**—In the Court of Appeal on Friday, before the Master of the Rolls, Lord Justice Collins, and Lord Justice Romer, an application was made by the defendant for judgment or a new trial in an action tried before Mr. Justice Wills and a special jury at Birmingham Assizes. The action was brought for specific performance of a covenant to build, or, in the alternative, for damages for breach of that covenant. The corporation of Wolverhampton had conveyed to the defendant, Samuel Enmons, a piece of land, and the defendant covenanted with the plaintiffs that he would commence to erect upon the land within twelve calendar months from May 25, 1897, a new building of a minimum height of 35 ft. from the pavement to the eaves or parapet, and not more than the height regulated by the by-laws in force in the borough, and would complete the same ready for occupation within two years from the date aforesaid. The defendant submitted to the plaintiff some plans for eight houses, and they were accepted. The defendant also pulled down some existing buildings standing on the land in question, but subsequently he decided to abandon the proposed building; in view of the overbuilt condition of the neighbourhood, it would be impossible for him to make any profit out of the intended scheme. The plaintiffs thereupon brought this action. The defendant pleaded that this was not a case in which the Court would grant specific performance, and he brought into Court a sum of 40s. as sufficient to satisfy the plaintiffs' claim for damages. At the trial Mr. Justice Wills was of opinion that the plaintiffs were entitled to an order for specific performance; but, in case the Court of Appeal should be of the contrary opinion, he left to the jury the question of the amount of damages to which the plaintiffs were entitled. The jury assessed the damages at £50. The learned Judge gave judgment for specific performance. It was now argued on behalf of the defendant in support of the application that the judgment for specific performance ought to be set aside, and that the plaintiffs were not entitled to any other judgment than one for £50 damages. The Court dismissed the application. The Master of the Rolls said that he thought that this was a case for specific performance. In his opinion, where there was a specific unambiguous agreement to erect a building, and it was important to the person with whom the agreement was made, over and above mere money damages, that the agreement should be carried out, that was a case in which the Court of Chancery would have granted specific performance. If the party had contracted to build according to specific terms, it was not fair that he should be allowed to break his contract and then say that the other party should only get damages out of him. The judgment of Mr. Justice Wills was right. Lord Justice Collins and Lord Justice Romer concurred.

ELECTRIC ADVERTISING SIGNS.—**HULL v. LONDON COUNTY COUNCIL.**—(King's Bench Division, Jan. 26, before Mr. Justice Bruce and Mr. Justice Phillimore.)—This was an appeal, in the form of a special case, from the decision of the magistrate at Clerkenwell. Mr. Macmorran, K.C., said this case raised a question as to the legality of the erection of an electric advertising sign. It was suggested that the particular sign in question came within section 73, sub-section 8, of the Metropolitan Building Act of 1894, as being a projection within the meaning of that section, and as such required the consent of the County Council before the sign was erected. On May 17, 1900, at the Clerkenwell Police-court, an information was preferred on behalf of the County Council, under the section of the Act, against Charles Hull, the appellant, that he, on Dec. 19, 1899, at 209, Seven Sisters-road, did unlawfully extend a projection beyond the general building line, without the consent of the County Council, contrary to the section. The information was heard by the magistrate, and the appellant was fined 40s. and 2s. costs. The appellant asked the magistrate to state a case. The applicant was a tenant of 209, Seven Sisters-road, and had decorated the front of his shop by the erection of an electrical sign, and the applicant's case was that the information was invalid, because it was not laid within six months from the time when it arose. Another point was that the advertisement was not an infraction of the Act, as it did not extend beyond the general line of buildings. His (Mr. Macmorran's) contention was that the respondents were wrong, and that the matter was important, because if they were right it would mean that no sign whatever, even of letters on the wall of the house, could be put up without the consent of the County Council. He did not suggest the advertisement was not a projection, but he con-

tended it was not such a projection as it was intended that the Act should apply to. At the close of the argument the further hearing was adjourned. When the hearing was resumed the following day, Mr. Macmorran also raised the technical point whether the prosecution for the alleged offence was barred under Section 11 of the Summary Jurisdiction Act, 1848, by lapse of time. The sign was completely affixed on June 20, 1899, but the summons was not taken out by the respondents until nearly a year afterwards—viz., on May 17, 1900. Mr. Horace Avory, K.C., on behalf of the respondents, submitted that Section 73 must be read in conjunction with Section 22 of the Act, and the projection, such as was complained of, would, in that sense, come within one or other of those sections, and, therefore, required the sanction of the respondents before it could be erected. The Court reserved judgment.

IN RE W. S. WOOD, LIVERPOOL.—The first meeting of the creditors of W. S. Wood, Gloucester-place, Liverpool, was held at the Official Receiver's office on Friday, Mr. F. Gittins presiding. The statement of affairs showed 103 unsecured creditors, the total liabilities amounting to £4,834 13s. 4d., and the assets to £1,106 4s. 3d. The debtor had been in business some years, and his losses had been on contracts and elsewhere. Mr. H. D. M'Ausland, of Lord-street, was unanimously appointed trustee, with a committee of inspection consisting of three creditors.

CHIPS.

Fire broke out in the premises of Messrs. Hutcheson and Grant, joiners and sawmillers, Pitt-street, Glasgow, on Friday morning, damage to the extent of £1,500 being occasioned. A large portion of the building, which was a two-story one, was damaged, whilst machinery and stock timber was almost totally destroyed.

The new Dumkier United Free Church at Kirkcaldy was opened on Friday. It is in style Late Decorated of a Scottish type, and is seated for 740 persons, while adjoining is a session-hall accommodating 260 persons.

The Parliamentary Committee of the Liverpool Corporation have reversed their previous decision to oppose the Parliamentary Bill for constructing a mono-electric railway between Liverpool and Manchester. By the casting vote of the chairman the previous resolution was rescinded, and it was decided to recommend the city council to oppose certain clauses only.

At the last meeting of the Court of Common Council, the Lord Mayor stated that the two sheriffs, Mr. Alderman Vaughan Morgan and Mr. Lawrence, had agreed to present to the City a painting for one of the vacant panels in the Royal Exchange, commemorating the proclamation of the accession of King Edward VII. from the steps of the Royal Exchange.

Mr. B. T. Batsford announces a second issue of Mr. Edwin O. Sachs' work, "Modern Opera Houses and Theatres," which will be published in the spring. Mr. Sachs' work comprises three folio volumes with 220 plates and over 1,000 illustrations, and the first edition appeared 1896 to 1898, after having required over eight years' preparation.

A large clock has just been erected in the parish church, Chatton, Northumberland, by Messrs. John Smith and Sons, Midland Clock Works, Derby, and the same firm are now making a very large clock and chimes for Beverley Minster, which will strike the hours upon a bell of between five and six tons weight.

Mr. E. D. Ford, architect, of 30, Keppel-street, W.C., who volunteered for service in South Africa as a trooper in the 49th Company Imperial Yeomanry, died at Pretoria on the 20th ult. from an attack of enteric fever. He had been a member of the Architectural Association for the past three years.

The new electric station for the East Ham District Council is being ventilated by means of Shorland's patent exhaust roof ventilators, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

Mr. Ducat, an inspector from the Local Government Board, held an inquiry on Friday at the town-hall, Dewsbury, into an application by the corporation for sanction to borrow £3,160 for the purpose of carrying out works of street improvement in Huddersfield and Thornhill-roads. The inspector had previously viewed both thoroughfares, accompanied by Mr. Dearden, borough surveyor.

The Radstock Urban District Council, near Bath, are threatened with proceedings by the Somersetshire County Council for polluting the watercourse running through the town, and have now unanimously decided to instruct Messrs. D. Balfour and Son, of London and Newcastle to prepare a scheme of main sewerage and sewage disposal to submit to the Local Government Board for their approval.

Trade News.

WAGES MOVEMENTS.

ASTORIA.—The master plasterers have intimated to the employers their intention, in consequence of dull trade, of reducing the wages by 1d. per hour—viz., from 8d. to 7d.

BELFAST.—The dispute in the local building trade, which entered on its ninth month on Saturday, and affects about 1,200 workmen, is as far off settlement as ever. On Friday meetings of both masters and men were held, and while the latter, backed up by the executive of the Carpenters and Joiners' Union, with headquarters in Manchester, adhered to their original demands of a farthing per hour advance and other concessions, the masters, falling into line with the Employers' Association in Glasgow and Dundee, will notify the men of an intended reduction of wages from 8d. to 8d. per hour.

DUMFRIES.—The master masons have intimated a reduction in wages from 8d. to 7d. per hour, and the men have acquiesced.

SPRING-TOWN.—In furtherance of the movement for an increase of wages in the potting trade, a meeting of operative potters was held at Stoke Town Hall, on Wednesday in last week, Mr. T. Edwards presiding. It was resolved to ask for a uniform advance of 10 per cent. in March next.

CHIPS.

The remains of Mr. James Charles Gaskin, builder, Canterbury, and a member of the town council, whose death occurred at his residence in Victoria-road, Wincheap, on Saturday, January 26, in his 52nd year, were interred in the new cemetery on Friday afternoon. Deceased for many years carried on business as builder, painter, and plumber in Canterbury, first in partnership with the late Mr. R. Godden and subsequently alone. He built and restored many of the buildings belonging to the Dean and Chapter, and many churches and schools in Canterbury and other parts of East Kent.

The tender of Mr. R. P. Vincent, at £38,870 5s. 5d., has been accepted by the Queensland Railway Commissioner for the erection of the carriage and wagon shop in connection with the scheme of railway workshops at Ipswich, Q. Mr. Vincent is already carrying out contracts for the erection of the other shops started. He was the second lowest tenderer in this case; the other tenderer, whose price was £36,548 12s. 11d., found himself unable to comply with the conditions in regard to time of completion.

The newly electrically equipped sections of the Huddersfield tramways system were inspected by Major Druitt, R.E., and Mr. A. P. Trotter, C.E., of the Board of Trade; and Mr. W. Vyle, of the Engineers' Department of the Post Office Telegraphs. Southwaite, Crossland Moor, and Longwood were first visited, and then the car was brought to the centre of the town. Afterwards the party proceeded to Edgerton, Lindley, and Outlane. The inspectors visited the generating station at Longroyd Bridge. The borough engineer, Mr. K. Campbell, accompanied the inspectors on their tour.

At the town-hall, Sunderland, on Friday, Mr. H. Percy Boulnois, M.I.C.E., one of the inspectors of the Local Government Board, conducted an inquiry into the petition of the Sunderland Corporation to the Local Government Board to issue a Provisional Order to empower the council to put into force (with reference to lands required for the purpose of widening Snyrna-place and Hendon-road) the powers of the Land Clauses Acts.

The proposed extensive new works at the Sandon Dock, Liverpool, were under consideration at the meeting, on Friday, of the Mersey Docks and Harbour Board. Mr. Hughes, chairman of the works committee, explained that the works differed from those originally intended when application was made to Parliament. The graving dock which was to be at the Sandon Half-tide Dock would be constructed elsewhere: the Sandon Dock would not be narrowed: on the northern side would be a double-story shed 95ft. wide, with roadway 130ft. wide; and on the east quay a single-story shed. The board had power to spend £400,000 in connection with Sandon Dock; half of that was for the new graving dock, and they would require about £115,000 more than the original estimates. In accordance with the standing orders, the recommendation stood over for a week.

Messrs. Wilkinson and Houghton, who propose to establish a brickyard near Mill-road, Cleethorpes, which is objected to by the property-owners and ratepayers, have offered to refer the matter to arbitration. This, however, has been declined by the committee for the residents, with an intimation that unless the firm state a sum which they will be prepared to take for the land, negotiations will cease.

A meeting of the provisional committee in connection with the Abbey and George A. Clark Town Hall surroundings improvement scheme was held on Saturday in the council chambers, Paisley. Committees and conveners were appointed. Dr. Gentles having submitted the report of the provisional committee, on the application to the town council and the harbour trustees for aid in connection with the scheme, it was remitted to the committee to report on the best method for bringing the restoration scheme before the public.

From among 61 applicants, Mr. Hector F. Gullan, A.M. Inst. C.E., has been chosen superintendent of works by the city council of Belfast. Mr. Gullan is but 31 years of age.

The Bishop of Manchester consecrated, on the 31st ult., the new church of St. Anne's, Hindsford, near Atherton. The church has cost £6,670, exclusive of the site, valued at £320, and will accommodate 454 seats.

On Wednesday week, at the Mechanics' Institute, Crewe, Mr. Gerald A. F. Fitzgerald and Colonel Boughay, Light Railway Commissioners (with Viscount Emlyn as acting secretary) opened an inquiry into an application by the corporation of Crewe for powers to construct a number of light railways in roads within the borough, and other roads outside.

The first trial trip on the first electrical tramway in London was run early on Monday morning on the lines of the London United Tramways Company. It will now extend from Hammersmith Broadway to Kew Bridge and Brentford, and from the terminus of the Central London Railway at Shepherd's Bush to Acton, with a connecting link from Shepherd's Bush along Goldhawk-road to Young's Corner, in the Chiswick-road. Although the electrical equipment of the lines and the generating plant has been ready for use for some months, it has not been possible to begin the experimental running of cars until the present time, owing to the inability of the Board of Trade to settle the regulations for the due protection of the magnetic instruments at Kew Observatory from disturbance by stray electrical currents from the tramway. Even now the arrangements have not yet been settled, and further experiments have to be made. The Kew authorities are seeking by tests to determine the amount of magnetic disturbance, if any, caused by the operations, and on the Kew report the Board of Trade will formulate regulations so that the line can be opened for public traffic.

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TENDERS.

* Correspondents would in all cases please send the addresses of the parties tendering, at any rate, in the accepted tender, it adds to the value of the information.

BIRMINGHAM, KEN.—For the erection of new band and boiler, coking, central drainage work, and sundry additions at Pearly Schools, for the Fifth School Board. Messrs. Ford, Son, and Burrows, 21, Aldermanbury, E.C., architects. Quantities supplied:—

Woodward and Co.	£7,244 0 0
Martin Wells and Co.	6,711 0 0
Patman and Fotheringham	6,708 0 0
Jerrard and Sons	6,475 0 0
Tinze	6,342 0 0
Miles	6,344 0 0
Proctor	6,335 0 0
Thomas and Edge	6,288 0 0
Foster Bros.	6,057 0 0
Enness Bros. (accepted)	5,907 0 0

BRAUNSTON, KEN.—For alterations and additions to house at Braunston Station, for Mrs. C. G. Knight. Mr. Ernest E. Colman, King's Lynn, architect and surveyor:—
Truck, R. Brancaster (accepted) ... £298 10 0
For plumbing works in connection with above:—
Plowright, J. Lynn (accepted) ... £57 10 0

CHICHESTER, DEVEN.—For works of sewerage at Chichester, for the St. Thomas Rural District Council:—
Gwall, Topham (accepted) ... £38 0 0

DEVONPORT, DEVON.—For alterations to St. Aubyn Vicarage, for the Rev. Coulthard. Mr. Edgar M. Leest, Public Hall Chambers, Devonport, architect:—

Oliver, W. J.	£148 5 5
Jenkin, T. and Son	122 10 0
Healy, J. and Son	121 10 0
Veale, D.	119 10 8
Trickett, A.	112 10 0
Perkins, S. Devonport (accepted)	10 10 0

DUNDEE, SCOT.—For the construction of a sewer in Club-garden, for the urban district council:—
Fisher, G. B., Dundee (accepted) ... £73 0 0

HIGH WYCOMBE.—For new billiard-room and additions at "Hillside," Mr. Arthur Vernon, 29, Cockspur-street, London, S.W., and High Wycombe, architect:—
Hunt, C. H., and Son ... £1,365 0 0
Gibson, G. H. (accepted) ... 1,245 0 0

KESSEINGLAND.—For carrying out works of sewerage at Kessingland, for the Mutford and Lothingland Rural District Council:—

Cutler, Heywood, and Co., Gunton, Lowestoft (accepted) ... about £2,200 0 0

LYNN. For alterations and additions to East Anglian Hotel, King's Lynn, for Messrs. Nicholls and Campbell, Ltd. Mr. Ernest E. Colman, King's Lynn, architect and surveyor:—

Brown, W. H., Lynn	£177 0 0
Hill and Horsley, Lynn	124 0 0
Smith, W. F., Lynn (accepted)	120 0 0

(Architect's estimate, £130.)

NEWPORT, MON.—For the erection of the new council chambers and offices, Newport, Mon., for the Monmouthshire County Council. Mr. W. Tanner, county surveyor:—

Jones Bros.	£10,335 0 0
Parfitt, A. E.	9,500 0 0
Bowers and Co.	9,577 0 0
Diamond, T. C.	9,500 0 0
Morgan, A. S.	9,461 0 0
Linton, J.	9,141 0 0
Blackburn, W. M.	8,805 0 0
Mate, J.	8,881 0 0
Reed, C. H.	8,800 0 0
Linton, W. A.	8,781 0 0
Jordan, E. C.	8,697 0 0
Richards, D. W., Ltd., Newport, Mon. (accepted)	8,470 0 0

SOUTH SHIELDS.—For rebuilding the Blue Bell Inn at Ryhope Sunderland, for Mr. Joseph Johnson. Mr. Henry Grieves, A.R.I.B.A., Albany Chambers, South Shields, architect:—

Taylor and Welford, Sunderland £4,255 0 0 (Accepted.)

WARRINGTON, CH. DEVON.—For laying the water-main to Waggonman's Row, for the Chester-le-Street Rural District Council:—

Hedderley, T., Wallsend (accepted) £15 14 0 (Surveyor's estimate, £125.)

WARRINGTON, CH. DEVON.—For putting in taps and branch pipes in Waggonman's Row:—
Hedderley, T., Wallsend (accepted) £72 16 0 (Surveyor's estimate, £54 13s)

WARRINGTON, CH. DEVON.—For putting in taps and branch pipes at Washington Cottages:—
Hedderley, T., Wallsend (accepted) £35 0 0 (Surveyor's estimate, £42 7s)

WOLVERHAMPTON, W. DEVON.—For laying out and making-up Victoria-street, for the urban district council:—
Holloway, Wolverhampton (accepted)

LIST OF COMPETITIONS OPEN.

Newtownards, Ireland—Water Supply, &c.	James Colville, Clerk The Workhouse, Newtownards	Feb. 9
Bristol Alterations to Petty Sessional Court and Offices	The Clerk, County Council Offices, Bristol	13
Ballarat, Victoria—Soldiers' Statue, Bronze or Marble (cost £1,500, £2,000, £2,500)	J. W. Nedwell and W. D. Hill, Hon Secs., Ballarat, Victoria	14
Nottingham Sewerage Scheme for the Parishes of Colwick-Gedling and Burton-Joyce	C. J. Spencer, Clerk, Public Offices, Basford, Nottingham	Mar. 25
Dudley—Six Villas and Six Cottages	G. W. Waring, Mining Engineer, 42, Wellington-street, Dudley	—

LIST OF TENDERS OPEN.

BUILDINGS.

Woodbridge, Suffolk—Kiln and Furnace	Thos. Mortimer	Thos. Wm. Cotman, Architect, Northgate-street, Ipswich	Feb. 9
London—Children's Wing to Nazareth House	Rural District Council	Edward J. Toye, Architect, Strand, Londonderry	9
Shillelagh—Labourers' Dwellings	H. B. Lee	J. J. O. Ramey, C.E., Shillelagh	9
Carlisle—Improvements to Charlotte-st. Congregational Church	School Board	Johnstone Bros., Architects, 39, Lowther-street, Carlisle	9
Great Yarmouth—Additions, 9, Gordon-road, Southtown	Aberystwith School Board	C. G. Baker, Architect, Town Hall Chambers, Great Yarmouth	9
Wrexham—Six Houses, Hampden-street	C. F. Thomson	W. H. Bosker, Monumental Mason, Rushton-road, Wrexham	9
Newport, Isle of Wight—Repairs to Church Tower	Middlesex County Council	Colson, Farrow, and Nisbett, 45, Jewry-street, Winchester	9
Llanelli—Classrooms, Bigyn Boss School	St. George's (Hanover-sq.) Guardians	J. B. Morgan, Architect, Llanelli	11
Aberbeeg, Mon.—School 426 places	School Board	R. L. Roberts, Architect, Victoria Chambers, Abercarn	11
Peterborough—Shops, Showrooms, and Subway, Cowgate	U.M.F. Church Trustees	J. G. Stallebrass, F.I.A.S., Architect, North-street, Peterborough	11
Hounslow—Additions to Polytechnic	Urban District Council	H. T. Wakelam, County Surveyor, Guildhall, Westminster, S.W.	11
Chelsea, S.W.—Children's Home, Milman-street	Pioneers' Industrial Society, Ltd.	Edwin T. Hall, F.R.I.B.A., 57, Moorgate-street, E.C.	11
Beckersmet—Additions to Property	Urban District Council	Henry Hall, Stanley Arms, Calderbridge	11
Llanelli—Corridor, Lakefield Infant School	Guardians	J. B. Morgan, Architect, Llanelli	11
Redruth—Renovating Church and Premises	E. T. Jackson	Sampson Hill, Architect, Green-lane, Redruth	11
Aberlour—Additions to Cottage	Islington Borough Council	Charles C. Doig, Architect, Elgin	12
Ilford—Pavilion, Central Park	Corporation	H. Shaw, A.M.I.C.E., Surveyor, Cranbrook-road, Ilford	12
Dewsbury—Three Blocks of Four Houses	Glamorgan County Council	Holton and Fox, Architects, Corporation-street, Dewsbury	12
Tonypre—Gallery in Bible Christian Chapel	Borough Council	C. Morse, High-street, Tonypre	12
Whitby—Electric Light Station	Glamorgan County Council	Wm. Seaton Gray, Clerk, Council Offices, Whitby, Yorks	12
Mount Bellow—Improvements in Workhouse	North Dublin R.D.C.	J. Smith, Architect, Ballinasloe	12
Bridlington—Additions to 3, Sea-view	Glamorgan County Council	J. Earnshaw, Architect, Wellington-road, Bridlington	12
Holloway, N.—Tanks and Additions to Elec. Lighting Station	Metropolitan Asylums Board	A. Hessel Tiltman, F.R.I.B.A., 81, Russell-square, W.C.	12
Coventry—Repairs to Dolphin Inn, Market-square	Town Council	J. E. Swindlehurst, City Engineer, St. Mary's Hall, Coventry	12
Pontypriid—Weights and Measures Offices at Police Station	London County Council	W. E. R. Allen, County Council Offices, Cardiff	13
Shoreditch, E.—Generating Station, Whiston-street	Sion Baptist Chapel Trustees	H. Mansfield Robinson, Town Clerk, Town Hall, Old-street, E.C.	13
Bridgend—Weights and Measures Offices	Industrial Co-operative Society	W. E. R. Allen, County Council Offices, Cardiff	13
Colcock, Dublin—Thirty-two Labourers' Dwellings	Irish Co.-op. Agency Society	John O'Neill, Clerk, North Brunswick-street, Dublin	13
Barry Dock—Weights and Measures Offices at Police Station	School Board	W. E. R. Allen, County Council Offices, Cardiff	13
New Malden—Shop and Cottage, Elm-road	Industrial Co-op. Society, Ltd.	Vincent Davison, jun., Architect, Bartley Lodge, New Malden	13
West Bridgford—Destructor Buildings, &c.	Industrial Co-operative Society	Wm. Pare, C.E., Surveyor, George-road, West Bridgford	13
Scarborough—Offices, &c., Dean-street	Lighting Committee	Runton and Barry, Architects, Huntriss Chambers, Scarborough	13
Port Talbot—Weights and Measures Offices at Police Station	Shoreditch Borough Council	W. E. R. Allen, County Council Offices, Cardiff	13
Bradford-on-Avon—Additions to King's Arms Brewery	Guardians	W. H. Stanley, Architect, Market House Chambers, Trowbridge	14
Hampstead, N.W.—Weighbridge Foundations &c., Lawn-rd.	Kingston-upon-Hull School Board	T. Duncombe Mann, Clerk, Embankment, E.C.	14
Burnage, Manchester—New North Aisle, St. Margaret's Church	School Board	Austin and Paley, Architects, Lancaster	14
Scarborough—Converting St. Nicholas H. into Municipal Offices	Hendon Union Guardians	Henry W. Smith, Engineer, Town Hall, Scarborough	14
Lowestoft—Boys' Home, Battery Green	Urban District Council	The Architect's Department, County Hall, Spring Gardens, S.W.	14
Higher Cloughfield—Sunday School	Lancashire Asylums Board	Alfred Coates, Sunny Lea, Burnley-road, Rawtenstall	14
Darwen, Lancs.—Extensions to Spring Bank Branch	Urban District Council	J. B. Thornley, Architect, Darwen, Lancs.	14
Salisbury—Masonic Hall, Crane-street	Urban District Council	Alfred C. Bothams, Architect, 32, Chipper-lane, Salisbury	15
Limerick—General Offices and Stores	James M'Mahon	Bryan E. F. Sheehy, C.E., Architect, 13, William-street, Limerick	15
Ashford, Middlesex—Two Board Schools	Swindon and Highworth Guardians	R. J. Lovell, Architect, 46, Queen Victoria-street, E.C.	15
Smallbridge, Rochdale—House	London County Council	B. E. Sugden, 333, Smallbridge, Rochdale	15
Bingley Shop, &c.	London County Council	W. Rhodes Nunns, Architect, Market-street, Bingley	15
Hampthwaite—Church Restoration	Isle of Thanet Union Guardians	C. Hodgson Fowler, F.S.A., Architect, The College, Durham	16
Anfield Plain—Shops, &c.	Guardians	Geo. Thos. Wilson, Architect, 121, Durham-road, Blackhill	16
Wrexham—Fourteen Houses, Hampden-st. and Victoria-rd.	Parochial Charities Trustees	E. Hamner, 37, Penybryn, Wrexham	16
Canterbury—Extension of Electricity Works	Hon. Douglas A. Tollemache	The City Surveyor's Office, Tudor Chambers, High-st., Canterbury	18
Kingston—Infirmary at Union Workhouse	St. Giles' Guardians	C. S. Delfosse, Architect, Duke-street, Kingston, Herefordshire	18
Hoxton, N.—Alterations to Roof of Public Library, Pittfield-st.	Holborn Borough Council	J. Rush Dixon, A.M.I.C.E., Boro' Eng., Town Hall, Old-st., E.C.	19
Todmorden—Board-Room and Offices, Hall-street	W. F. Egerton	Jesse Horsfall, F.R.I.B.A., Burnley-road, Todmorden	19
Hull—School Buildings, Thoresby-street	School Board	Brodrick, Lowther, and Walker, Architects, Lowgate, Hull	19
Lerwick—Public School	Hendon Union Guardians	R. D. Ganson, Clerk, School Board Offices, Lerwick	20
Edgware, Middlesex—Probationary Ward at Schools	Urban District Council	J. Hudson, A.R.I.B.A., 23, York-place, Baker-street, W.	20
Blairgowrie—St. Andrew's United Free Church	Lancashire Asylums Board	D. and J. R. M'Millan, Architects, 211, Union-street, Aberdeen	20
Wallasey—Extension of Engine House	Urban District Council	J. H. Crowther, Engineer, Great Float, near Birkenhead	21
Rainhill, Lancs.—Piggeries at Asylum Farm	Town Council	Jas. Gornall, Clerk, Rainhill, Lancs.	21
Liscard, Wallasey—Car-Sheds, &c., Seaview-road	Urban District Council	J. H. Crowther, Engineer, Great Float, near Birkenhead	21
Devonport—Alterations to Mortuary	James M'Mahon	The Borough Surveyor, 30, Ker-street, Devonport	21
Liscard, Wallasey—Engine and Pump House, Seaview-road	Swindon and Highworth Guardians	J. H. Crowther, Engineer, Great Float, near Birkenhead	21
Armagh—Premises	London County Council	H. C. Parkinson, Architect, 11, College-street, Armagh	22
Stratton St. Margaret—Infirmary, &c.	London County Council	R. J. Bewick, M.S.A., Architect, 35, Regent-street, Swindon	25
London, N.W.—Fire-Brigade Station, Euston-road	London County Council	The Archt.'s Dept., F. B. Branch, 3, Warwick-st., Charing Cross, S.W.	26
London, W.C.—Three Blocks Workmen's Dwellings, Drury-lane	Isle of Thanet Union Guardians	The Architect's Department, 18, Pall Mall East, S.W.	26
Minster—Laundry Buildings at Workhouse	Guardians	Leonard Grant, Architect, High-street, Sittingbourne	27
Wrexham—County School Buildings	Parochial Charities Trustees	J. H. Phillips, Architect, Clive Chambers, Windsor-place, Cardiff	28
Sheffield—Administrative Block at Fir Vale Infirmary	Hon. Douglas A. Tollemache	E. W. Mountford, F.R.I.B.A., 17, Buckingham-st., Strand, W.C.	28
Walthamstow—Four Shops and Office Premises, Wood-street	St. Giles' Guardians	W. A. Longmore, F.R.I.B.A., Hoe-street, Walthamstow	28
Felixstowe—Balmoral Hotel (200 rooms)	Holborn Borough Council	Thos. Wm. Cotman, Architect, Northgate-street, Ipswich	Mar. 4
Camberwell, S.E.—Infirmary Extension, Brunswick-square	W. F. Egerton	Edwin T. Hall, F.R.I.B.A., Architect, 57, Moorgate-street, E.C.	13
London, W.C.—Swimming-Baths, &c., Broad-street	School Board	Clarkson and Son, Architects, 28, Great Ormond-street, W.C.	—
Morecambe—Rebuilding Royal Hotel	Hewitt Bros., Ltd.	Herbert Howarth, Architect, Regent-road, Morecambe	—
Gawthfield—Additions to House	Endowed School Governors	Settle and Farmer, Architects, Ulverston	—
South Ossett—School Extension	Sheffield Laundry Co.	F. W. Ridgway, F.R.I.B.A., Borough Chambers, Dewsbury	—
Newhaven—Schools (500 seats), Meeching-road	G. E. Moser	Henry Ward, Architect, 8, Bank Buildings, Hastings	—
Borrowash—Additions to Bloso House	Munster and Leinster Bank	E. R. Ridgway, M.S.A., Long Eaton	—
Hull—Warehouse, Blackfriargate	Jos. Walker	John M. Dossor, A.R.I.B.A., 2, Manor-street, Hull	—
Dewsbury—Hide Market	Crowe and Co., Ltd.	F. W. Ridgway, F.R.I.B.A., Borough Chambers, Dewsbury	—
Watford—Lecture-Room, &c.	Evershed, Ltd.	C. P. Ayres, Architect, Burvale, Watford	—
Milford Haven Wesleyan Church	John Harrison	John Willis, Architect, Victoria Chambers, Derby	—
Hillsborough—New Premises	Ernest Carr	W. J. Taylor, Architect, Bank-street, Sheffield	—
Dalkeith—School	Harding, Richardson, Rhodes, & Co.	T. Sturrock, Clerk, Dalkeith	—
Kendal—Refronting Shops, 47 and 51, Highgate	E. A. Baker	John Stalker, M.S.A., Architect, Kendal	—
Manchester—Playground and Offices	Arthur W. Midgley	S. M. Chadwick, Archt., Bindloss Chmbs., Chapel-walks, Manchester	—
Dunmanway—Offices, &c.	Sir Christopher Furness, M.P.	Arthur Hill, B.E., F.R.I.B.A., 22, George's-street, Cork	—
Castleford—General Post Office, Bank-street		Garside and Pennington, Architects, Pontefract	—
Featherstone—Three Houses and Shop		W. Hamilton Fearnley, Architect, Featherstones	—
Hull—Bakery, &c.		Freeman, Son, and Gaskell, Architects, 11, Carr-lane, Hull	—
Leeds—Excavating for Warehouse		Corson & Jones & Perkin & Bulmer, Jr. Archts., Cookridge-st., Leeds	—
Horsforth—Ten Through Houses, Featherbank-road		G. F. Bowman, Architect, 5, Greek-street, Leeds	—
Dove Dale—Additions to Peveril Hotel		Garlick and Flint, Architects, Buxton	—
Leeds—Stable, &c.		Fred Mitchell, Architect, 9, Upper Fountains-st., Albion-st., Leeds	—
Carlisle—Shops, &c.		Joseph Graham, Architect, Bank-street, Carlisle	—
Gorseinon Baptist Chapel		D. L. Jones, Architect, West End, Llanelli	—
Scotby—Villa, Cope-hill		Johnstone Bros., Architects, 39, Lowther-street, Carlisle	—
Clay Cross—Six Pairs of Houses		Ernest Oxley, M.S.A., Architect, Clay Cross, Derbyshire	—
Leeds—Alterations to Tower Works		William Bakewell, F.R.I.B.A., 38, Park-square, Leeds	—
Audenshaw—Wesleyan School, Hooley Hill		Burton and Percival, Archts., 150A, Stamford-st., Ashton-u-Lyne	—
Great Yarmouth—Fishing Premises on South Dunes		George Waller, Architect, Middlegate-street, Great Yarmouth	—
Clay Cross—Dwelling-House		Ernest Oxley, M.S.A., Architect, Clay Cross, Derbyshire	—
Leeds—Enlargement of Crown Works, Harehills-road		Albert E. Dixon, A.R.I.B.A., Architect, 5, Park-lane, Leeds	—
Alton—Dwelling-House		Ernest Oxley, M.S.A., Architect, Clay Cross, Derbyshire	—
Grantley—Entrance Lodge, Cottages, Laundry, &c.		Bland and Bown, Architects, Harrogate	—

THE BUILDING NEWS

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THE ABUSE OF MATERIALS IN DESIGN.

THE tyranny of custom and convention is observed in the bulk of our public and private buildings, both in town and country. We mean that, with very few exceptions, the same materials are used in very much the same manner, varied only to suit the demands of popular styles. The factors of variation in building, such as plan and construction, operate only slightly compared with the demand of style. Whether the buildings are for official purposes, for shops, or residences, little variation is found, except those permissible within the limits of brick or stone or terracotta applied to the prevailing style. What is scarcely to be understood by the "man in the street" is that the same treatment or style is applied to a set of public offices that is found in a private residence, or a country inn; that a tower attached to a private residence should resemble the campanile-like chimney of the water-supply pumping-station or factory chimney. It is a common remark amongst those who know little of architecture how much one church resembles another, if both should have the usual accompaniments of nave, chancel aisles, and a tower and spire, and how much Mr. Jones's house is like that of Mr. Smith. These resemblances are not remarkable when the same plan and appointments obtain in both; but when the buildings are widely different in their plan and office it does appear curious that no variation has been attempted in the outward expression—that the same kind of fenestration and the same architectural details appear in both. The same window or doorway and its dressings are seen in the façade of a bank and in the front of a restaurant or suburban library. Such resemblances ought to be impossible if the principle was followed that plan or use should govern the design. And yet we are so used to these conventions, or architectural idioms if we may so call them, that we seldom stop to argue about the adaptability of any set form or expression. The same dress is seen applied to buildings of most diverse character and material, as may be observed in walking through any of our principal streets. The "Modern Renaissance," a very elastic mode, is used not only for our most dignified public edifices, but for the meanest class of buildings. It is this sort of incongruity that has helped to hold up our modern architecture to ridicule, and has given occasion to critics to attack its position as representing a living development of art.

There is another view of the matter: the relation of workmanship to material. With our improved methods of craftsmanship, it might have been expected that a corresponding improvement would be made in the material. But this is not so. We employ the same materials, and in much the same way, as they were used in the earlier periods, and this notwithstanding the fact that our stone quarries are worked on more economical methods, and that we have machinery for cutting, sawing, and converting stone, for lifting and handling it, that our ancestors did not possess; that our brick and terracotta manufactures have greatly developed, and our resources in preparing, mixing, and firing the clay by the aid of machinery have much improved. The principles of brickmaking and moulding and of stonecutting are practically the same as they were, and the chief effect of mechanical appliances has been to

economise the material and to produce greater uniformity—qualities that have been rather detrimental to individuality and variety. In the cheaper kind of building we see such things as columns sawn down the centre, mullions and cornices cut to save waste. In carpenters' and joiners' work, the use of labour-saving machines has introduced a number of "short cuts" and easy moulding methods, and the general tendency has been to shorten labour at the expense of solidity. But workmanship should emphasise material, as it has done in all the best periods of art. The Gothic Revival aimed at doing this, of exhibiting clearly the intention and use of every piece of stone, brick, wood, and iron; but its disciples lost their way in imitating the details. In another offshoot of the same movement, Mr. Norman Shaw was one of the band who shook off the trammels and outward forms, and perceived the true spirit of Gothic and Classic by giving a due prominence to materials as influenced by workmanship. The late Mr. Sedding did something to bring back the true relation. In short, the conventions of style and of custom in the use of materials have combined to produce the dull monotony of the average London buildings by ignoring the factors of variation due to differences of plan, workmanship, and purpose. It is time that the profession reverted again to the "true principles" taught by the earlier Gothic revivalists. Some few of them are leading the way. Their works disclose a much closer relation between plan and utility and design. They reject convention for mere convention's sake; any custom that is contrary to the requirement of the building is not followed. To them such conventions as Classic window dressings and porticoes, intended to be constructed in stone, reproduced in cement or brickwork, are intolerable. On the true principles of architecture, stone porticoes and window-dressings and quoins used with brick cannot find any favour, such features having been designed for stone or marble, with which thin courses of brick could not bond or unite. The new school of architects who are not conventionalists would not think of using features or details confessedly intended to be in stone. If they introduced columns or pilasters into their brick buildings, they would construct them of brick or terracotta, and alter their proportions to suit the bond. Constructively, too, how can a tall pilaster or column of stone worked in one stone be joined to brickwork without risk of unequal settlement? It is certainly contrary to any sound principle of architecture to copy stone details and features in brick, and this is one of the lessons that the study of the Gothic revival in its spirit has taught. The replicas in stucco and "compo." of Classic buildings and porticos, which were once prevalent, very soon disappeared when a healthier condition of art came.

The reintroduction of terracotta and gauged brickwork, and new materials like artificial stone, have not led to any reform in our mode of treating materials. Even now we have buildings of brick and terracotta that may, for anything to the contrary, be copies of brick and stone buildings, notwithstanding the properties of the two materials are so different. Blocks of terracotta are cast or moulded to represent stonework, with deep projecting mouldings, and to shapes that cannot be moulded, dried, and burnt without warping. We see, too, that masonry jointing is followed in many buildings, whereas the nature of the clay product and its twisting in firing suggests a modified jointing which only experience can detect. It is in the burning of the clay that the shrinkage and distortion take place, and many blocks have to be thrown away after the labour of moulding, and so it is that the manufacturer ought to be in the position to advise the architect what are the best sizes

and forms to withstand these tendencies. Of course, these distortions take place principally in clays which have not the proper admixture of broken pottery, or ground glass. Some clays, again, are less liable to contract than others, and those that come from Tamworth in Staffordshire, Poole, Dorsetshire, and other places in Devonshire and Northamptonshire are largely used. The clays at least should be as pure as possible and mixed in proper proportions that will give a paste easily worked, and will dry and fire well. Then there are the processes used in shaping by hand, stamping in plaster moulds, &c. These all have to be considered in the design of terracotta work. M. Lefevre in his able work on pottery refers to these points: when the pieces are of complicated form, they require to be moulded in parts and then united. The solid compact blocks are hollow or chambered, which lighten them and facilitate uniform drying and firing. In pieces moulded in parts, care should be taken not to make the joints "through delicate portions, and, therefore, the designer should study the most suitable form to be given to the moulds." Under conditions so far removed from those of stone, why is it we are content to follow the details of stone buildings? In England we have seen a few bold employments—the Natural History Museum, the Prudential Insurance Offices in Holborn (now being extended), the buildings in Carey-street (by Mr. Waterhouse, R.A.), the Birmingham Law Courts (by Messrs. Aston Webb and Ingress Bell, built with the terracotta of J. C. Edwards, Ruabon); also buildings in Sloane-square, Bayswater, Birmingham, and Nottingham, constructed with the Hathern Station Brick and Terracotta Co.'s products, and theatres at Peckham and Richmond, all examples of the use of this material. In some of these the architects have treated the terracotta in a manner that is quite in keeping with its physical nature, employing it largely in all cornices, strings, and repetitional features, and in a manner consonant with a moulded material. We think a legitimate treatment is to be found in using terracotta facing bricks in the place of brick facings, so that the whole façade is of the same material throughout. This homogeneous use has not been adopted to any large extent; but in buildings like the new rusticated ground story of the Legal and General Insurance Offices in Fleet-street we may see the material so used. The employment of the material in broad masses in the walling appears to be a more sensible manner of using it in town buildings; the bond and connection of the parts is thereby maintained and imitation of brick or stonework avoided. Artificial stone we have not yet employed architecturally to any large extent, though, of course, being cast in larger masses, it suggests a stone treatment to a greater extent than terracotta. For buildings like houses built in rows or terraces, working-class dwellings, large factories, and where there is repetition of features and details such as windows, jambs, mullions, lintels, &c., artificial stone has a future. But it, too, will call for a distinct application of design, unlike anything we can see in freestone, and the avoidance of any resemblance to high relief and undercut enrichment. Modern methods used in carpentry and joinery call also for notice. Design in these branches has been less restricted to old forms. The immense influence of machine labour has brought about a change. Machine-made mouldings have encouraged all kinds of cheap ornamentation. Moulded work like cornices, once wrought in the solid, can now be produced by "building up" members with machine-run mouldings; the price of machine-made joinery such as doors is only 7d. per foot for double moulded doors 1½ in. thick. Mouldings are now "planted" instead of being run in the

solid, as they were formerly. All kinds of inexpensive ornamental work can now be produced by the lathe, especially panelling and fretwork. This facility has resulted in a very inferior kind of workmanship. We have lost the solidity and character of old work, but ornamental effects are obtained at much less cost. Metal-work, castings, and hammered work, plasterwork and decorations in moulded and stamped materials have all introduced newer methods of workmanship and fixing, but they have not produced a corresponding change in style. The old wrought-iron and hammered-work designs for metal are copied and recopied, the old plaster and stucco decorations of the Tudors and Stuarts are repeated with feeble meaning and character, and, instead of carved woodwork, a mechanical process turns out imitations of the hand-carving of the best periods at a low price. No difference in treatment has accompanied the altered conditions of production, no limits placed on machine production—a serious breach of the principles of honest art. These are matters that call for revision if our architecture is again to become a living representative art, making materials its true vehicle of expression.

DUDLEY GALLERY ART SOCIETY EXHIBITION.

THE exhibition of water-colours at the Egyptian Hall, Piccadilly, is one of moderate size and pretensions. We have here landscape, portraiture, and *genre* in some variety, many of the members following the traditional and safer methods, while a few seek to express the facts of nature in a more simple and direct mode of study. Walter Severn, the President of the Society, sends three pictures of interest, of river torrents and falls over rocky passes between banks of foliage. Two of them depict Ross-shire rivulets, as the "Auchnaclara Falls" (57), a gushing stream making its way between hills and over natural rocky weirs, with a hilly background, very effective and natural. "River Divie, Ross-shire" (64), is a river flowing over a rocky bed between wooded banks. The sparkle of the rippling water is painted with Mr. Severn's accustomed vigour and realism. In another, "The River Findhorn" (216), the gleams of light of the flowing water and its wooded banks make a charming piece of river scenery. After noticing the president's work, we may refer to a few of the more pleasing subjects. Mrs. Ross Hake is strongly in evidence in her very admirable studies from Dinan, that very picturesque French fortress town. We have (1) "Chestnut Time, Dinan," a very picturesque corner of streets, with three old overhanging-storied houses of stone, very broad and feelingly drawn; other sketches include "The Road to La Garaye, Dinan" (34), "Autumn" (80), a capital study of the well-known "Rue de l'Horloge" (112), with its old houses and piazza below, the "Market," and the picturesque church of "St. Sauveur" (217), all truthful in drawing and colour. Chas. J. Adams sends several studies of landscape bits from Sussex and Surrey—"Changing Pasture," "A Summer Afternoon," with its suggestion of sunlight through trees and road into field; and "A Sussex Fair" (226) all fresh in colour and sentiment. Evangeline Jex-Blake is a large contributor. Her sketches of landscape, as "Evening after Rain," has a delightful sense of freshness and colour. "Romsey Abbey" (87) and the view of Winchester Cathedral, showing avenue, are rather weak and uncertain in the architecture, but broad simple wash sketches that appeal by their directness. The view at Hennebont, Brittany (128), suggests a windy day, and the d-lighthouse expanse of yellow gorse in "A Hillside, Somerset" (158), is a charming piece of

landscape. Breadth, as well as delicate handling in foreground, are seen in Henry Stannard's "When Meadows are Fair" (7), in "Primrose Eve," a sunset landscape, and the foreground and trees of "Mistletoe Gathering" (26). Very pleasing grouping of leafless trees, with a flock of sheep passing through a gate, is seen in "Late Autumn" (102), charming in its colour and delicacy. A large Alpine view, "Sun Rising over the Cloud Sea," from the Rigi, Scheideck, by H. Forbes Witherby, deserves notice for its effective painting of the floating clouds below the snow-clad peaks, and sense of atmosphere. Two other Swiss landscapes—one from the Engadine—may be seen. For its technical handling, L. Block's shelf of old books, "In Books lies the Soul of the whole Past Time" (10), deserves recognition; and several lady artists—Alice E. Manly in "Gravity," a seated figure of a girl reading by a window; Miss Agnes J. Rudd's boat "Under Repair" (15); Eleanor Brace's "The Little Bookworm" (16); Gertrude Peel's "The Lonely Pool" (27), a late evening effect with masses of dark trees; and works by Miss J. A. Gilchrist, a mist effect (19); Miss Winifred Buxton's "Salt Marshes" (21); Mrs. Hussey Freke (22, 29), Mrs. Mary Stormont (24), Miss Josephine Christy (25), and Gertrude Martineau (18)—deserve notice in passing. S. C. W. Roscoe has a clever piece of coast scenery, "Beer Head, Devon" (40), and "Studland Bay" (183); and Fred C. Dixey, "A Bit of Lynmouth" (50), "A Mill by the Sea, Cornwall" (114), and other Cornish subjects. Miss J. A. Gilchrist's weird subject, "The Elfin Wood" (46), a pine forest with its contorted tree-roots, and her other drawings, have a vein of poetry. H. G. Stormont has a keen and delicate sense of nature. His "Autumn Morning" (53) is pleasing as a study of sunlit effect. The river scene (66), by Miss Margaret Bernard, "On the Medway, Looking towards Chatham," is a direct and pleasing view of the murky town and its docks. Another view "From Chatham Pier," with an evening sky (103), and "On the Downs near Wimborne" (98), also an unfinished sketch of "Hursley, Hants" (121), a clever wash and line sketch, and a very charming impression of meadow and trees at Nutshalling, Hants, are other subjects. J. Twigg, in No. 71, is happy in his "Spring in Byfleet Woods" (71), blue and white patches of colour in the fields. The work of Alfred Stevens is always interesting. His "View of Antibes," though slight, is telling; his large piece, "In the Gorge, Pontresinco," mountain scenery with a deep gorge banked by woods, is painted with much spirit. One of the best landscapes is Sylvester Stannard's "The Old Mill" (78), a large, forcible work—an undulating, barren, sandy heath under a stormy sky, covered with furze and bushes, a cart road winding its way past a windmill, painted with much power. His smaller work, "The Waning Hour," is soft and delicate in its sunset tone over roadside and cottage. "Solitude" (173) bears out its name, a dark sky and landscape, with a gleam of light on river. Mrs. Mary Stevens contributes two or three charming garden studies in her usual brilliant style. "Cottage Garden, Norfolk" (79), "Hollyhocks" (236), are delightful sketches of the blossom of garden flowers.

Lexden L. Pocock, a country roadside, a horse dragging a log (97), "Pollard Willows" (101), "Birch Trees" (203) are drawn in his sympathetic manner. A cattle group of much skill is by Berenger Bengel, cows grazing in a field, and his "In the Woods" (213) is full of delicate handling. Miss Helen Green sends a picturesque sketch at St. Alban's (122); Miss Christian Severn a careful drawing of "Gateway of Bishop's Palace, Wells" (132), a view of "Kensington Palace" (141), and other subjects of interest. B. J. M. Donne, Rose Barton (136) "A Big Haul," a study of a boy fishing with a child in a little

go-cart by the sea; Mima Nixon's "Mudeford, near Christchurch" (148), her "Sunset" (151) are represented in some pleasing sketches. Eleanor Brace's figure of a man seated leaning forward smoking is well drawn. Maud Peel's cottage interior, with a little girl watching a baby in cradle, is full of feeling. The flowers on the ledge of windows bespeak domestic peace. Mrs. Mariquita Moberly shows some dexterous handling in her "St. John's Wood Jungle" (168), and we can appreciate Fred. J. Aldridge's "Off Shoreham," the old harbour with its fishing vessels and choppy sea (175). One of the cleverest works of the *genre* class is "Curios and Curiosity" (181), by F. C. Fairman, an inquisitive dog astonished at an idol standing on the floor. L. Burleigh Bruhl (194) shows some nice colour and crisp handling in "Autumn Morning" and in 202. Mrs. Mariquita Moberly has a pleasing study of a little girl in muslin apron in a meadow, 198, "Spring-time," and we note Miss Frances E. Nesbitt's group of fishing boats (219), Charles J. Adam's large drawing, "A Sussex Fair," a busy crowd of farmers and cattle, in which the spirit of the busy fair is realised; a nice study of grass and wild flowers, "The Brooklet," by W. Affleck; and one or two sympathetic works by Mrs. Sydney Bristowe, as the slight sketch of a lady in a garden, her face and dress lit up by strong sun; No. 262, by Philip C. Smallfield, a nice drawing, delicate in colour; and some others by J. Carlisle, R.A.K., Marshall C. Duassut, and R. Wane.

THE ARCHITECTURAL ASSOCIATION.

THE fortnightly meeting of the Architectural Association was held, by adjournment from the previous week, on Friday night. The President, Mr. W. H. SETH-SMITH, F.R.I.B.A., on taking the chair, in well-chosen words expressed the regret all felt at the death of Queen Victoria, and moved a vote of condolence with the King; this was seconded by Professor R. ELSEY SMITH, and was passed, all the members rising and standing in respectful silence during the time the President was speaking. Mr. Seth-Smith, having another engagement, then relinquished the chair in favour of Mr. W. A. Pite, vice-president. Messrs. A. F. Benjamin, W. J. Brough, B. A. Everitt, A. H. Fleuss, A. P. Lambert, and E. E. Temple were elected as members; Mr. T. Davison was reinstated in membership. Mr. R. S. BALFOUR, hon. sec., announced that the first spring visit would take place at 2.30 p.m. on Saturday, the 16th inst. (tomorrow afternoon), when, by permission of the architect, Mr. J. F. Bentley, the Roman Catholic Cathedral and Cardinal's House, Ashley Gardens, Westminster, would be inspected.

ARCHITECTURE IN CRETE AND GREECE.

A paper on this subject, illustrated by numerous lantern views, and by sketches, plans, sections, coloured reproductions of fresco decoration, and photographs, was read by Mr. D. T. FYLE, A.A. Travelling Student for 1899. Like all Greek lands, Crete belongs to the dawn of history, and is rich in remains of that Mycenaean civilisation about which so little is known. This period, however, belongs more to the domain of archaeology than of architecture, as also, in the case of Crete, do the Greek and Roman periods, their remains being so scanty as to afford little architectural interest. After the decline of the Roman period, the island was conquered by the Saracens in A.D. 820; then by the Byzantines in 961. But to Venice belongs the chief Mediaeval period, which lasted from 1204 till the final conquest by the Turks in 1669. The island in its most representative aspects is Venetian. Under the Turks how rebellion followed rebellion is matter of well-known history. It is certain that Crete held an important place in the Early Aegean civilisation. Homer mentions it as a land of ninety cities, from which we can infer that it was highly populated. The sites of many of the Homeric cities have been identified, and are now partially disclosed—notably, Knossos, Gortyna, and Ghoulas. In their construction we notice the same characteristics which are displayed in the Palaces of Tiryns and Mycenae, in the main-

land of Greece, excavated by Schliemann and Dr. Dörpfeld, &c. In all are the same mud (or rubble and mud walls, mysteriously appearing to be contemporary with Cyclopean masonry; the same circular stone column-bases and paved areas. Only Knossos has produced some

ENTIRELY NEW FORMS OF ARCHITECTURAL PLAN AND DETAIL,

and such a collection of painted stucco, both existing on the walls and in fragments, as to make it quite unique in the Levant. Looking at this stucco as a means of decoration, it is noticeable that two distinct scales seem to have been employed—one, comparatively easy to appreciate now, consisting of life-size representations of figures, bulls, gryphons, &c., or conventional representations of landscape; the other consisting of very small objects or figures produced in a more brilliant style, and found in such small fragments as to make it hard to understand how it could have been used. From this latter variety some very interesting architectural representations are apparent, which help to elucidate the subject of Mycenaean building. The art displayed at Knossos is the complete fruition of the genius of the time. Though some of the finds at Vaphio, in Greece, are quite as artistically mature, a comparison of Knossos with either Vaphio or Mycenae is futile at present, as so much of the treasure of the latter comes from the tombs, which in the Cretan site have not as yet been discovered. But in the palace itself enough has already been found to show that in this reputed home of the art of Daedalus, a very keen, strong perception of natural forms existed, and a direct getting at nature behind an indefinable veil of conventionality, which gives the art of this epoch a distinct value of its own. In building, the outer walls, which may have been more or less fortifications, are based on ponderous squared blocks of gypsum, which weathers with water grooves, like the hard calcareous substance of a cave. The bases of many walls in limestone and gypsum have been found very accurately levelled and laid out, but it still remains a problem in many cases whether the superstructure was of the same substantial material or of mud to take stucco work. Nothing of direct evidence has been found to point to the existence of later Greek or Roman settlements over this primitive one of the palace at Knossos, though many Roman fragments exist in the vicinity. The site of Ghoulas is an Acropolis much more approaching the wild and inaccessible character of Mycenae than the refined and civilised Knossos. Splendid polygonal masonry exists here, forming ramparts up a steep hillside which overlook a truly Greek prospect of hill and plain. And here also are picturesque evidences of a later Roman settlement on the Acropolis itself. But Crete has no prominent Roman architectural remains above ground that would bear comparison with those of Italy, Greece, and Asia Minor, and be of much help to the student in his search for the historic links which bind the Imperial Art to the Romanesque and Renaissance of later times. Coming to more modern times, we notice also that Crete has passed through so many vicissitudes, and fire and sword have wrought in it such havoc, that its present day can show but little of permanent architectural value above ground. Owing to the fusion of periods of the dominant mediæval power and the later conquering Islam, Candia, the most important historical town and the capital of the island, presents in its picturesque aspect an Eastern town with white walls and minarets, combined with massive sea-walls and fortifications. The more

MODERN ARCHITECTURAL REMAINS

of Crete include (1) churches and monasteries in a pseudo-Byzantine style, similar to those met with in the country districts of Greece; (2) buildings of the early Venetian period, in which the pointed arch was employed; (3) later Venetian buildings in a provincial Renaissance style; (4) Turkish buildings, which are mainly domestic and in plain stucco. The town of Candia contains examples of all of these, except the first, though it has also been sadly deprived of much that was apparently interesting of the Venetian period. The great defence of Crete against the Turks in the 17th century was a matter of such interest to the Christian Powers of Europe that we fortunately possess some literature on the subject, and contemporary plans of the fortifications of

CANDIA,

the siege of which lasted for more than two years,

and became one of the most memorable in history. A plan of that time was made by a French admiral, the Marquis de Ville, who commanded a relief expedition. This plan will serve to show to the curious the nature and extent of the original fortifications. Many of these, especially on the north side, exist to the present day in a good state of preservation. The nature of the harbour has been taken advantage of much in the same way as at Rhodes; and the fortifications of the two towns resemble one another, both being more irregular than those of Nicosia in Cyprus. The Candia walls are good examples of their class, but they have no prominent towers and no decorative details of interest, except occasional panels with the Lion of St. Mark and a few small curved coats-of-arms. So they are probably inferior in general interest to those at Famagusta in Cyprus, and those at Rhodes. There are three principal gates in existence, all Renaissance of the Venetian period: the Canea Gate, the Kainourio, or "New" Gate, and the Lazaretto Gate. This last is probably the most interesting of the three, and has a long vaulted passage from the ornamental inner gate to the outer entrance. This passage is barrel-vaulted in rubble, and descends pretty rapidly towards the outside. It turns sharply to the left at the end, so that there is an intersection, over which is a dome lit with a single eye: thus when the outer gate was shut the passage would not be in darkness. The form of the inner gate, with its pediment, is quaint; but the details are coarse, and in no way improved by much whitewashing. The part of the wall at this gate was perhaps the most impregnable, as it commanded a very deep moat, owing to the rapid slope of the ground towards the sea. The level square of the town inside the gate is raised artificially, and a few steps ascend to a platform which juts out beyond the main line of wall, being built upon a forework which originally protected the bastion here. The raised plateau is now the Public Garden, and commands a fine, though limited, view seawards, and a good sight of the walls. To return to the other gates. The Kainourio is more commonplace than the Lazaretto, but is of naked stone, and has a good quiet cornice. It forms the entrance to the town from the interior of the island, and the present roadway really crosses what was the moat of Mediæval times. It has also a long vaulted passage from inner to outer gate, though not so remarkable as the other. The Canea Gate has even less of architectural interest than the other two. It has no vaulted passage, being merely in the thickness of the wall, and it leads to the high road that runs eastwards along the north shore of the island, towards Retimo and Canea. Leaving the walls and gates now, and entering the town by the harbour, we see first the remains of the great arches of Venetian Gothic which formed the arsenals of the Mediæval town. They are marked thus on the old plan, and were, no doubt, complete before the great siege. Now, in their ruined state they are used as boat slips. The responds which exist on the back wall show that there must have been ribbed and groined vaults here, and the piers that exist are massive enough to show the large scale of the whole. Leaving the harbour, we pass up a sloping street to the centre of interest—the market square—at the highest part of the town. The market square has a fine old Venetian fountain in the centre, surrounded by a Turkish marble and wrought-iron grille, and from this point can be seen, partly hidden by a large plane tree, the only large building in the town of any character—the old Venetian Renaissance armoury now proposed to be renovated and used as a museum of antiquities. This building is a very good example of its period, and exhibits, as do other little things in Candia, many of those quaint provincialisms which so often delight the careful eye in architectural by-paths. The proportions and details are alike good, and admirably in scale with the general air of the town. A crowning balustrade is rather wanting somehow, though its addition might take away from the Venetian character of the building. White stone is the material used, but the lower story has been whitewashed. The smallness of the rustication is noticeable. At the rear of the building, otherwise plainer than the front, are some quaint metopes in the Doric frieze, representations of weapons, &c., carved with great boldness. The other Renaissance work in the town is fragmentary, but the Turks largely adopted details of the Late Venetian occupation, which causes some confusion. The Gothic work in the town, or

rather the "pointed arch" work, is in some cases even more difficult to analyse, as the Turks are always at home with the pointed arch, so that the Venetian Gothic and the Turkish work are not always readily distinguishable. Both of them have probably a Saracenic origin. Venetian Gothic is certainly quite a unique flower in architecture, and perhaps belongs properly to the East, as the Turkish work undeniably does. There are one or two charming fragments of Venetian Gothic in the town, enough to show what might have been under a more fortunate dispensation. The only Gothic church in the town, which is still standing, is now used as a mosque, but is evidently the building marked as St. Saviour's in De Ville's plan. It has no pretensions whatever, being merely a barn-like structure, with high, narrow, pointed windows, all perfectly plain. It has a stumpy Turkish minaret of pleasantly original design. This mosque is illustrated in Pashley's "Travels in Crete." The wall fountain in the little square beside this mosque is the only example I know in Candia of Roman work being built into a wall by later hands. This fountain has merely a quaintness caused by broken-nosed statues and battered columns, associated with some common-sense mouldings. Of Turkish work, one of the best old fragments is the series of arches in the main street leading up from the harbour. The Turkish fountains are mostly at the corners of the streets, and, generally speaking, are hardly worth taking note of; but in one or two cases the simplicity of the mouldings deserves attention. Turkish work, when it redoubles on itself without other influences, has a tendency to over-elaboration, and most of the great show fountains of Constantinople are glorified grottoes in their total effect; so that it is refreshing to come across some things in this little provincial town which, either from poverty of workmanship or uncertainty of style, are simpler and broader in treatment. A little corner kiosk illustrates the better class of Turkish bijou in Candia, and though it is small, has some claims, if one can get behind the oceans of abuse and whitewash. In the narrow winding streets one sees Turkish wooden houses with latticed windows, usually with a good projecting cornice and pilasters, and the upper story projected two or three feet, and supported on wood brackets. In the high walls giving access to the forecourts of the stone houses, one sees here and there a Renaissance door and window, with occasionally a wall fountain, a trough surmounted by a round-arched niche and accessories being the usual motive. The wood houses are pretty much the same as those in the streets of Stamboul, and remind one a little of English half-timbered work, gables of course being absent, and a thin, matchboarded effect taking the place of the solid oak of the English. I have reserved the mention of the earliest work of all, the Byzantine, till the last; but there is really no definite building in that style that I am aware of existing in Candia. Pashley mentions nothing in his book, and the only thing which Spratt mentions which I have not identified is (I quote his own words) "the ruined church of St. Titus, over the eastern part of the fortifications, for such a town of cathedral proportions and architecture. A handsome entrance and circular window over, and part of an elegant baptistery attached to it, are still standing." It may have been an overlook on my part, but I certainly know nothing of such a church, which may, of course, have been destroyed since Spratt's time (1865). The church also may not have been Byzantine. This takes us pretty well over the ground for Candia. In general impression, it is a hopeless mixture of the odds and ends of various periods. There is not a recent building of any note whatever, except perhaps the Greek cathedral, and not a single mosque which is worth enlarging on. The best mosque in the town is the plain old building mentioned before as the only Gothic church existing; but here, beyond a picturesque, weather-beaten, brick-and-stucco wall, there is nothing to be noted. The modern Greek cathedral is best seen at a distance, and gives additional life to the sea-view of the town. One can pretty well take in the town after a walk through, and appreciate what it is—tawdry, neglected, Mediæval Eastern—shortly to become more important, perhaps, through a museum which consists of valuable exhibits with no proper building to hold them. But, leaving Candia, let us turn our attention to other parts of Crete, and see what is to be found in the way of architecture.

And if the result is disappointing, we can remember that archaeologically, at least, the ancient evidences are of immense value. The results of Knossos, Praesos, Sirtyna, Chonlas, &c., and the sundry caves of Z-us are giving Crete a research interest quite exceeding expectations. Architecturally, however, it has no town with a strong Medieval interest, like Rhodes, and no body of work such as is disclosed to us in M. Enlart's new book on Cyprus. The results for Crete are in comparison meagre and fragmentary; here and there a small Byzantine church or a picturesque monastery, and for the rest, merely the plain domestic work met with in the country districts of any Eastern land. It is true that there are two other towns of importance on the north coast—Canea and Retimo—Canea being really the modern capital of the island. The growth of Canea is due to the adjacent harbour of Suda, by far the best in Crete, and its prestige is only on the modern side. It is the residential town of the High Commissioner, and, like Retimo, a commercial centre. It would be necessary, therefore, to thoroughly explore the country districts to arrive at a complete knowledge of all the smaller Cretan works. As the architectural bits are so fragmentary, and native evidence so little to be depended on, this would mean a tour of several months' duration. I was only able to make a tour of about 100 miles through fairly representative country, but was thus able to appreciate pretty well what can be looked for from the island. I could not do better than illustrate by examples the Cretan house, church, and monastery.

THE HOUSES

of the Turkish beys are the only ones left to us of any importance. They are usually farmsteadings in themselves, but the houses of retainers are sometimes grouped in a tiny village near. I can briefly illustrate the better class of house by the one I have most acquaintance with—the headquarters of the excavation at Knossos—of which I have sketch and plan. The front entrance is quite a private one, and leads to the little piazza reserved for the household. The real entrance is at the back, through a courtyard, and leading out of this yard, round which are grouped the stables, is a smaller one descending to the kitchen apartments and entrance to the harem. The selamlık looks out to the front, as do the other principal rooms. All have stone-wall fountains, which cool the air in summer, and a divan, or at least a platform, round three sides. Glass is a luxury, but hinged wood shutters opening outwards are indispensable. In the house I am describing there are loopholes in the walls, presumably for defence. Joined on to the house, besides the little piazza in front, is a large water-tank, forming a reservoir for the irrigation of the garden. This tank is not conducive to health in summer time. The house is all whitewashed externally, and is very sensibly plain, with a square parapet to the flat mud or cement roof. The rain-water is carried off by channels running down the wall, which in the front of the house are screened by pilasters. The ceilings are of wood; stout exposed rafters carrying boarding. In the back entrance lobby is an olive press in the wall, for the use of the household. As for the villages, the small out-of-the-way ones have the merest shanties, with rough stone whitewashed walls and flat mud roofs, huddled together in picturesque style. The hill-villages in summer are pleasant, as one half lives on the roof. The larger villages have whitewashed houses, the more important ones with courtyards opening off the streets, and sometimes of two stories, as in Candia. Red-tiled gabled roofs are also occasionally met with, though they are really modern features. The next thing to consider is

THE BYZANTINE CHURCH.

This is often in splendid isolation, sometimes on a hilltop, and occasionally even on mountain summits. But every village has its εκκλησις; at feasts, such as Easter, a very important place indeed. The universal plan is an oblong hall, without a narthex, and with but one feature—the tiny apsidal projection at the east end, finishing semi-dome fashion. In this apse is the only fancy window; in common cases, usually a queer little two-light, with the luxury of a hoodmould. The better class of church has a carved door, or painting, in the plastered vault. Notes from the two churches beside the ancient site of Lyttos will illustrate. The rough plan and section of the adjoining church of St. George illustrates an average arrangement. There are traces of

rude painting in the vault of this church. A very common type of door-head in small churches was also sketched. The wood doors of these churches are sometimes elaborately carved. The usual type is a two-leaved square door, with a rounded centre-post, on which most of the carving is lavished. Many of these wood carvings are so undoubtedly executed in the full tradition of good work, that it is astonishing to find they mostly belong to this century; in some cases being done within the last thirty years. So tradition is dying hard in Crete. It is quite possible that these churches at Lyttos, not specially celebrated in the island, may point to some fairly interesting tit-bits of Byzantine work, with, perhaps, one or two new developments of plan in other parts of the island. But there are no outstanding churches of any size, and I doubt if results would go beyond the student's notebook. I have the names of three or four other churches in the island which are said to be interesting. Following naturally from this, of course, is the subject of

THE MONASTERIES,

as they always have chapels attached. The situation of monasteries here, as elsewhere in the Levant, is often very delightful. They are usually more subjects for the sketcher than the architect in his more practical moods, but the monastery at Arkadhi shows a front of considerable interest, with that quaintness of combined Gothic-Classic influence so instructive often in unhackneyed forms. Unfortunately, Crete is not rich in monastery work. Pashley mentions a monastery at Triadha, and gives rough sketch, which appears picturesque enough. The pen-sketch of a deserted monastery on Mount Iuktas shows how the average of these buildings tell by their grouping, but have no particular architectural qualities, strictly speaking. The second part of the paper, dealing with some

TURKISH WORK AT BROUSSA,

follows somewhat naturally from the first; as after an examination of the mosques of Constantinople, one feels, as in Crete, the readiness of the Turk to adopt the indigenous architectural forms in the territories of his conquests. The work of the Osmanlis at Broussa, however, is earlier and more representative than any found at Constantinople, and holds an isolated position in Turkish art, somewhat similar to the Cinque-Cento in the history of the Italian Renaissance. The intricacy in the developments of Eastern work is manifold, but in the vast web of Saracenic styles the growth of what might be called the Renaissance of Turkish architecture is at least clear and distinct. The beginnings are to be found in Asia Minor, in those large and suggestive and often very beautiful remains of the Seljouk domination. It may be said that this pointed work of the Seljouks bears most affinity to Persian work, on which it was directly founded. The work about which I wish to speak begins with the era of the Broussa Sultans, when Mourad, Bayezid, and Mohammed—all first of the name—built the chief mosques of Broussa. Founded, as it was, on what the Seljouks had done before, this work seems to have, in addition, some large and common-sense individualities. The typical two-dome plan, which Texier observes is not found at Constantinople at all, is best seen here in the Mosque of Mourad II., the Mosque of Bayezid I., and

THE GREEN MOSQUE,

or Mosque of Mohammed I. It is of this last, and of its Turbeh adjoining, that I wish specially to speak. The two-dome plan, in its completeness, has an open porch, or loggia, of the whole width of the entrance front; and this feature can be seen in the Bayezid and Mourad Mosques. The Green Mosque, however, was left incomplete, and the porch was never added. It would be interesting to know whether the great canopy of the central doorway belongs to the original period, or was added later. The mosque was built in 1420, and one hardly looks for such big, say Michelangesque, detail in Anatolia at that time. In exterior disposition the mosque is, uniformly, of two stories, finished with a cope, over which is a low-pitched roof. At the entrance end are two minarets, originally covered with green faience, and evidently constructed since the earthquake of 1855. The exterior, generally, is all marble surface, and has exquisite carving at the doorway, windows, and niches. The doorway is a particularly fine piece of design, both in proportion and detail. The thought displayed in this

building is its essential quality, and this one may realise without elaborate means. The adjoining Turbeh, or tomb of the founder, is one of the most delicious creations imaginable. The lower part of the exterior is of white stone, with large panels of bright blue-green tiles. The upper part is painted light green, and it is finished with a domical lead roof. The following notes concerning both these buildings were taken on the spot. Beginning with the Turbeh first. Outside, the mouldings are large and simple, and the size allows for great breadth of scale. There are ornamented tiles over some of the lower windows, and panels of same above these. The doorway is a fine piece of colour, painted, not tiled, and over the doorway is a good, simple, stone-moulded hood. The plan of the building is an octagon, with a range of large lower windows occupying six sides, the mihrab and door, opposite each other, being in the other two. There are two ranges of upper smaller windows, the highest being just below the springing of the dome, in that deep band of slightly projecting corbelling, triangled out, which occurs so often in Turkish domes. These top windows are stained glass, the others plain; but the light coming from the lower ones is subdued, as the wall is very thick, and the straight ingoings catch a lot of light. The interior defies description. A rich blue-green dado of hexagonal tiles, with a border at the floor and ditto at top, runs right round to a height of about 10ft. It stops against the doorway and mihrab, and the windows are set in it with independent borders. At the sides of each window—about midway up the dado—is an ornamental spot of tiling. At the broader mihrab and door there is only room for half of this. All is white plaster above the dado, except for a little centre flower painting in the dome, not of much account. The stone floor has an octagonal centrepiece, raised one step, and ornamented with tiles on the edge. Above this, again, is a square tiled platform, about 18in. high, for the bier. This platform has a vertical design of tiles of great beauty and exceeding richness of colour—a perfect harmony of blues. The mihrab has some exquisite work; in fact, it is full of the most delightful detail in form and colour. The small round pillars, covered with faience, and the centrepiece over the pointed niche-head, are specially noticeable. In the latter one notices the delicacy and beauty of the contrasts between the main ground colours: pale mauve competes with a light blue-green, helped by a judicious balance of white and green-yellow. There is an immense amount of study in the floral patterns. The lighting is perfect. Leaving the Turbeh, we come to the mosque. Outside, certain windows have a thin blue strip of tiles, 2in. or 3in. wide, inside the architrave. This has a good effect in combination with the white marble. The interior, considering its size, for bigness and beauty and rest, impressed me more than almost any I know. It is on the two-dome system, and quite successful, owing to some simple expedients. (1) The entrance domed hall has two side spaces opening off it, roofed with hexagonal domes, and with floors raised above centre level, which gives the entrance a breathing room that is particularly valuable. (2) The floor of the inner domed hall is raised some 2ft. 6in. clear drop above the other, with a small centre stepway only. (3) There is a flat marble arch between the domes, which is good, as it doesn't exclude too much light, or separate the domes too much. (4) There is a small octagonal fountain under the outer dome, which helps it to be more obviously an entrance to a higher shrine. (5) There is a circular top light over this dome, so that the inner dome, being darker, has more of an air of mystery. All the richness of tile decoration (and this part is quite as fine as the Turbeh) is concentrated on the doorway, side recesses, and upper gallery, so that the entrance end is bright and cheerful, yet with an air of quietness about the side niches of the door; the inner part is plain, sombre, and tomb-like. Yet with all the accessories the two are so perfectly joined together that there can be no question as to their being one building. Standing in front of the dail, looking back to the door, one notices the fine effect of the subdued light in the rich tile work there, all in a beautiful scheme of blue. There is a dado in this building as in the Turbeh, but not so fine; the colour is a plain dark green. There is nothing particular about the mihrab and minber. The lighting arrangement of this mosque are most instructive for study. There are three small windows in each of the main

domes, at the springing; and the side domes have each similar windows. The other windows, shown on the plan, give a subdued light, as in the Turbeh. The gallery on each side of and above the entrance is a most interesting feature. It bears some resemblance to the similar feature in the Mosque of Mourad II., of which Texier has a plan.

OTHER MOSQUES IN BROUSSA.

besides those already mentioned, are the 'Ulu Fami, or Great Mosque, the Mosque of Emir Sultan, and the Mosque of Mourad I. at Tchekirgeh. The former is a very large building, more like a bazaar than a mosque, and quite dominates the general view of the town. It is of large simple-pointed work, with two tall minarets and a forest of domes. It is finished in stucco, like most of the Constantinople mosques, and this poverty of material contrasts rather unfavourably with the Green Mosque, which is finished with marble both outside and in. Some very good brickwork is also to be seen at Broussa—in the exterior of the Mosque of Emir Sultan, and in the various Turbehs at the Mosque of Mourad II. The type of entrance loggia which was so common here, and which was continued as a feature in the Constantinople mosques, may be well seen from the Mosque of Bayreid I. In considering the conditions of the problems presented to us by these Turkish buildings, we can learn by seeing the use the builders of them made of their materials to hand *in toto*; that is to say, of conditions of climate and religion, as well as hard, matter-of-fact forces of everyday design; and following from this, by the good old lessons on the justification of apparent eccentricities, common in some form or other to every period of architecture. What strikes as boldness in a design, when we come to analyse its constructive meaning, may appear simplicity itself when the effect as it stands is only taken into account, and unworthy of any except admiring notice. For example, stripped of its effects and considered on plan, the corbelling out of the main domes of the Green Mosque on three sides only may appear freakish, but in reality it serves to make one interior of the two domes, especially as softened by the beautiful form of corbelling adopted by the Turks and all Saracen races. The fact, too, in the same building of a higher shrine inferior in cheerfulness to the lower entrance part seems peculiar on the face of it, apart even from any religious motive; but when we see that this effect is balanced by a stately gravity in the design or the entrance wall, and, moreover, is quite reasonable in itself from an æsthetic point of view, we realise a something here which gives a sense of fresh perception, and, as such, is, of course, of the highest value. The sense of strangeness in contemplating Eastern buildings at the first rush is inevitable to us, because the real East is far removed from the West in everything, including such a small thing as the treatment of an interior. The elements of the composition in a mosque interior are the fountain of cold water surrounded by cool and restful colours, and an exquisite diffused light. In the best mosques there is no attempt at strenuousness in anything. The mihrabs, though often marvels of detail, are set as a rich door in a plain wall would be, which means that they draw attention to themselves, but do not detract from the simplicity of the composition as a whole. Naturally, in Eastern countries the smallness of the entire window area necessary for lighting a building adequately vastly affects the conditions of design. It is this partly, perhaps, that makes the domical construction of these countries so easy, as there is no need to be eternally fussing about this or that window which interferes with this or that construction. The total effect of lighting in two interiors (one Western and the other Eastern) may be the same; the former with its many windows, and the latter with its few. The advantage, however, for purposes of decoration is instinctively with the East; the wall-spaces are broader and simpler, and the absence of an appearance of lighting forcing itself on one gives greater restfulness to the decorative effects. Thus as a measure the entire question of Eastern decoration must be considered with reference to itself alone. The large use of tiles in decoration is the prevailing characteristic of Persian art and that emanated from it. This makes possible the large spaces of plain colour which are necessary when only borders and spots of pure ornament are used. Hexagonal tiles of an exquisite blue-green, relieved by gem-like touches of pure colour, such as we see in the Green Turbeh, are,

under the circumstances, perfectly satisfying. It is a question of surroundings and mental attitude to a large extent. Coming from the blinding sun and dusty glare of an Eastern summer into such a perfectly neutral half-light, with its cool marbles and fountains, and its atmosphere of satisfying colour, one feels a sense of the fitness of things. Use and wont and perception of long ago have made the materials which best suit the situation. The practical conclusion of the whole matter is to try and find out how the Moslem has solved the ordinary problems of his building, for naturally he has a certain discount to start with, having Persian tiles, which belong to the world's chiefest treasures of art, at his command. But if there are evidences of thought in their setting—as, I think, will easily be found in such buildings as the Green Mosque at Broussa—we can have scope, after the first burst of admiration, to contemplate wise solutions of problems which come very near to us after all. There is a strange freedom also in the treatment of much of the Turkish work which makes it easy to institute a comparison with modern work. For instance, Mr. Philip Webb's conception of stone detailing seems to me similar to the attitude of the Broussa builders in a like capacity. A strong feeling for material is evident, and a daring reserve in design which is nearly always justified in effect.

Mr. EVANS, Keeper of the Ashmolean Museum, Oxford, the director of the excavations, supplemented Mr. Fyfe's paper by some explanations of the architecture of and fresco paintings on the discoveries at Knossos, showing that the work much resembled that found at Tiryns. Messrs. R. PHENE SPIERS, A. C. DICKIE, BERESFORD PITE, WALTER CRANE, A. T. BOLTON, R. ELSEY SMITH, and the CHAIRMAN joined in the discussion, and a hearty vote of thanks was accorded to Messrs. Fyfe and Evans, both of whom responded.

THE ARCHITECTURE OF THE TWENTIETH CENTURY.

By BANISTER F. FLETCHER.

GENERAL CONSIDERATIONS.

TO transport oneself into the middle of the new century requires perhaps more imagination than an architect in everyday practice has at his command, but it is interesting and perhaps instructive to try and think out the problems which are likely to harass the architect of the present century, and to picture in our minds how he will solve them. The following remarks are, therefore, necessarily speculative, because I am breaking away somewhat from the hard facts of the present and dealing with what may come to pass, say fifty years hence. Our subject is the Architecture of the 20th Century. Perhaps it will not be unwise to put the question to ourselves, What is Architecture? The answer to the question is really that which we shall give as the result of our imagination for the coming century. Architecture is the result, the record of civilisation, the permanent expression of the people, the great Recording Angel who writes on indestructible granite the manners and customs, the very lives of the people in whose times such architecture is carried out. Let there be no mistake in this, that architecture in this respect is as true now as it was in the times of the Egyptians, Assyrians, Greeks, Romans, or Medievalists. Then as now it records our lives, our civilisation, our mental and social conditions, as truly as does any mirror the man who stands before it. It is evident that, since the Renaissance, the record is more subtle, the pictures less clear, but that is because our civilisation is more complex and our methods more obtuse. When architecture ate of the tree of knowledge in the 15th century, and seized upon the outspread manuscripts and splendid structures of old Rome, she was doing something which, until then, was an unknown quantity in the world of art. Architecture until that time had been the spontaneous growth, the natural unbidden fruit of a tree planted on various soils and hence bore varied natural fruit, the result of such planting. In the 15th century, however, such a natural cause of growth was abandoned, and architecture, as far as outward form was concerned, went back like a bow unstrung to the ancient forms of Classic times. In other words the revival of the learning

of the ancients tended to produce the revival of the forms extant during the period of the Greek and Roman ascendancy. And so it must always be, architecture is made by the people and, *nolens volens*, it must bear the impress of the people's mind, although, at the time, it may be difficult to discern. Placing aside for a moment the new types of structures demanded by succeeding generations of men for their use, let us glance at the ever-recurring question of style in architecture, and see if we can picture that style of architecture which will be paramount in the dim and distant future. Of one thing we may be certain, I think, and that is, that whatever style in architecture may be in vogue, Classic, Medieval, or Renaissance, it will be so adapted to the needs of the people that its form will be to all intents and purposes new. We shall be spared the absurd and pedantic Greek temples which were erected as dwelling-houses at the beginning of this century, or later, the lath-and-plaster Gothic palaces which were to transport us back to the Middle Ages. The world is now too matter-of-fact and too much addicted to re-viewing buildings from the practical and sanitary point of view to put up with such chicaneries. Fashions in architecture we shall have as we have fashions in ladies' attire, or, for the matter of that, in men's garments; but we can safely predict that convenience in planning will not be sacrificed to outward form, and that the sizes of our floors and windows will not lie subordinated to anything but our requirements and convenience. Beyond that we may strain our eyes in vain along the architectural horizon in search of an advance copy of the style which will prevail. And this the more so because we must look unsuccessfully for new forms, unless we have new materials which will evolve such forms. It must be remembered that we are using the materials that the Romans used in our architecture, and although the difference is great compared with Roman architecture, yet it is comparatively little when the distance between the one and the other is remembered. It is only by "ringing the changes" on the various architectural forms and features that we can see the future of architectural design. I think it was Lord Eldon who said that "architects and lawyers were the most conservative people in the world." Perhaps his lordship did not remember that both Roman law and Roman architecture had reached a perfection of completeness beyond which it was difficult to go, and that, therefore, what appeared as conservatism was merely the inability to go further. Certain it is that architecture, like language, is a structure built up of certain well-known forms or letters. Now, in language it is not necessary to alter the number or names of our letters to produce a 19th-century literature! Tennyson and Shakespeare use certainly the same letters, and also largely the same words, yet one is not a copy of the other. The same in architecture. Because once or twice in the history of architecture there have been revolutions in form, as from Classic to Gothic and Gothic to Renaissance, people have come to expect what they call a new style in architecture every century or so, but such a thing is unlikely. It is in the putting together of various features that new phases in architectural art are introduced, and not by wholesale destruction and invention of new ones. To tell the truth, such invention is well nigh impossible; for, if we take such homely instances as a door, a window, or a fireplace, it is impossible to alter much the form of either, as long as the size and position of the same remain similar and appropriate. Thus architectural style will probably not vary much from the Renaissance form at present in vogue for public buildings or the Gothic for ecclesiastical buildings. But whatever form is current, there is no doubt that freedom—almost license, I had said—will be paramount. Such is the spirit of the age, thence the architecture will reflect such spirit. We need, I think, expect no more revivals. Architects will be honest in this. The attempt to foist imitations of another century, as in the Greek and Gothic revivals, will probably not recur, but design will travel along the smooth line of careful inventiveness without any revolutionary tendencies. But, in any case, as we shall see later on, difference in the needs of the people will produce buildings new in form and outline, if not of necessity largely so in architectural detail. It is the age of the democracy, and the buildings of importance, such as the libraries, public halls, &c., will tend to show the turn of civilisation in these constructions. If there is one thing more

* Read Feb. 8, before the Birmingham Architectural Association.

in evidence, and likely to be so than another, it is the complicated and intricate planning which many modern structures require. I shall refer to these later, but it must be apparent that these structures are quite modern in feeling and form, and that little of their character has been seen before. It is true that during the great Roman period of architecture, emperors vied with each other in the erection of public baths for the people; but these are isolated instances erected as a bribe to the populace. From the plan of a building is developed its general form, from the functions of its various parts is evolved its exterior, and as the various types of buildings alter, so does the architectural elevation vary with them. But before I pass on I must refer to the science and profession known as engineering, which, formerly in the architect's province, has now quite dissociated itself from its elder sister. There seems no doubt that, to posterity, the great engineering structures of the day will appeal as essentially of this century; such works as the Forth Bridge, the Eiffel Tower, the Tower Bridge, the Brooklyn Bridge, and many others are essentially new in form, born of a new material—steel—which, by necessity, has evolved forms quite new in the world of design. The number of such works will no doubt be largely increased, and the 20th century will probably be known as the "Steel" age. It is only to be hoped that the hideous structures perpetrated under the name of engineering will be improved in outward appearance, as they could easily be, by engineers being trained along with architects in their early studies. In France great engineering structures of this kind are often designed jointly in the manner indicated above, and this has been followed by very encouraging results, as at the Paris Exhibition of 1889. As far as civil architecture is concerned, there is little chance of the use of steel superseding that of other materials. Steel is not suitable for forming the walls of our houses. It is a conductor of heat. It is used in thin lace-like shapes, and is quite unsuited to keep out heat, cold, or the elements. Hence, although it is sure to be used for large engineering structures, or in isolated cases demanded by peculiar conditions, as at Chicago, it is not likely to be a factor in the construction of architectural forms *per se*. Its increasing use in warehouse roofs of large span will tend to alter interior architecture considerably. Instead of the ponderous wooden roofs erected in the past, a light steel framework, covered with plaster in coffered panels is likely to be largely used. The lace-work design and construction of the ribs prevents any necessity for tie-rods, and thus gives a new element in architectural design, which should produce new treatment.

ARCHITECTURE AND PUBLIC HEALTH.

It is admitted that architecture consists in the designing of beautiful buildings, suitable for the special purpose to which they will be put, and having, therefore, the essential quality of *fitness*. There can be no doubt that the healthy arrangement of buildings has much to do with architecture in its highest sense, and considerations relating to the health of the occupants of buildings affect the form and structure, and therefore the expression of buildings. In the coming century this will be even more distinctly the case, because there can be no doubt that the principles of sanitary science will be more strenuously sought after, and more rigidly applied. It might be argued that beautiful buildings are not necessary to health; but I maintain that to live among beautiful buildings set in well-designed streets does help to a healthy condition of mind. Paris as a city is, perhaps, too stereotyped in its architecture, too stiffly set in the framework of her streets; but one never visits it without feeling mentally in a beautiful atmosphere, which is, of course, sometimes counteracted by the unmistakable signs which seem inseparable from Continental cities, that the system of drainage is not quite perfect.

ENVIRONMENT.

I am stating an admitted truth when I say that environment is a great power—a great factor—in the formation of character, and in the general wellbeing of any community. How can we expect the gutter children of London to grow up as good citizens, as honest, sober, and manly, when they pass their lives in the filthy atmosphere of a London slum, with a square of dirty pavement for a playing space, and with a gin-palace for a background? We might as well try to get blood from a stone as citizens healthy

in mind and body from such a nursery. Slums are to a certain extent being exterminated; but if I judge the future aright, we are only at the beginning, and that by the middle of the coming century municipalities will have agreed that slums are as dangerous to the community as unhealthy drainage, and that light and air and plentiful sunshine shall find an entrance, as far as possible, into every quarter of our ideal city. What more can we look forward to, Mr. Chairman, than beautiful buildings, filled with light and suitably built from a sanitary point of view, and set on to broad streets so aligned that the sun's rays can penetrate during the greater part of the day? So much, then, for the element of fine art in regard to the house proper and its frame, the city beautiful, which, I contend, should be considered in relation to health arrangements. Further, the architectural conception of life is what we want—the idea of one controlling spirit guiding all others for the common weal and producing works of beauty, forming part of a general progress, the same kind of co-operative labour which resulted in the erection of the Parthenon and the Mediaeval cathedrals.

SANITATION.

We may spare a few moments to speculate on the construction of houses in the new century dealing with the subject:—(a) From the point of view of plan, (b) from the point of view of construction, (c) materials, (d) ventilation, and we may well preface these remarks with a suggestion for the necessity for a minister of public health, assisted by a committee of experts. Such an appointment is necessary, in order to codify the enormous amount of literature on the subject, and to place the carrying out of the Acts; if neglected by local authorities, in the hands of those who will not be under local influence, and who will have power to enforce the law. I shall touch upon this later, when I come to consider the smoke abatement nuisance.

PLAN.

Sanitation or public health will be the watch-word of the new century. Pure air, pure water, pure food, pure soil, clean dwellings, and clean bodies will constitute the wellbeing and strength of a nation. The more efficient sanitary arrangement and construction of our dwellings has been advancing steadily in later years, and lectures and treatises have been written galore on this most important subject, and yet how much remains to be done to render our dwellings in a sanitary condition! By the more general teaching of hygiene people may be expected to see more clearly the necessity for a soundly-constructed dwelling whereby doctors' bills may be avoided, and a more efficient day's work performed by the occupants. If we consider how often the ills that flesh is heir to are due to badly planned and constructed houses, it does seem startling that anyone is entitled to call himself an architect and be responsible for that most important of sciences—the planning of buildings;—but this will be referred to later. The advance in the system of planning buildings has been considerable in recent years, and no longer are houses arranged with the sanitary apartments ventilated on to the staircase or passage. Yet this was a common practice in the past, and there are numerous houses in London on the great landlords' estates where such cases exist even now.

CONSTRUCTION.

In the 20th century certain anomalies in the construction of houses, it is hoped, will disappear. Amongst the most notable of these are the spaces specially provided by architects for the collection of filth—for the storage and breeding of vermin—and the dissemination of disease. I refer in particular to the time-honoured method of constructing the ordinary combustible timber floor. It is useless lecturing on sanitary science while such a harbour for dirt is erected in almost every house. Washing such a floor possibly only makes matters worse—for half of the dirt is washed through the open joists between the floor, and rests contentedly on the laths which support the plaster ceiling below. Our floors must be solid if we would have them healthy. Hollow spaces of all kinds will, no doubt, be condemned by law in the coming century. Hollow floors, hollow walls, hollow spaces behind skirtings, and the like will be a thing of the past.

MATERIALS.

Since architecture first began to raise herself to the level of fine art, there has been very little

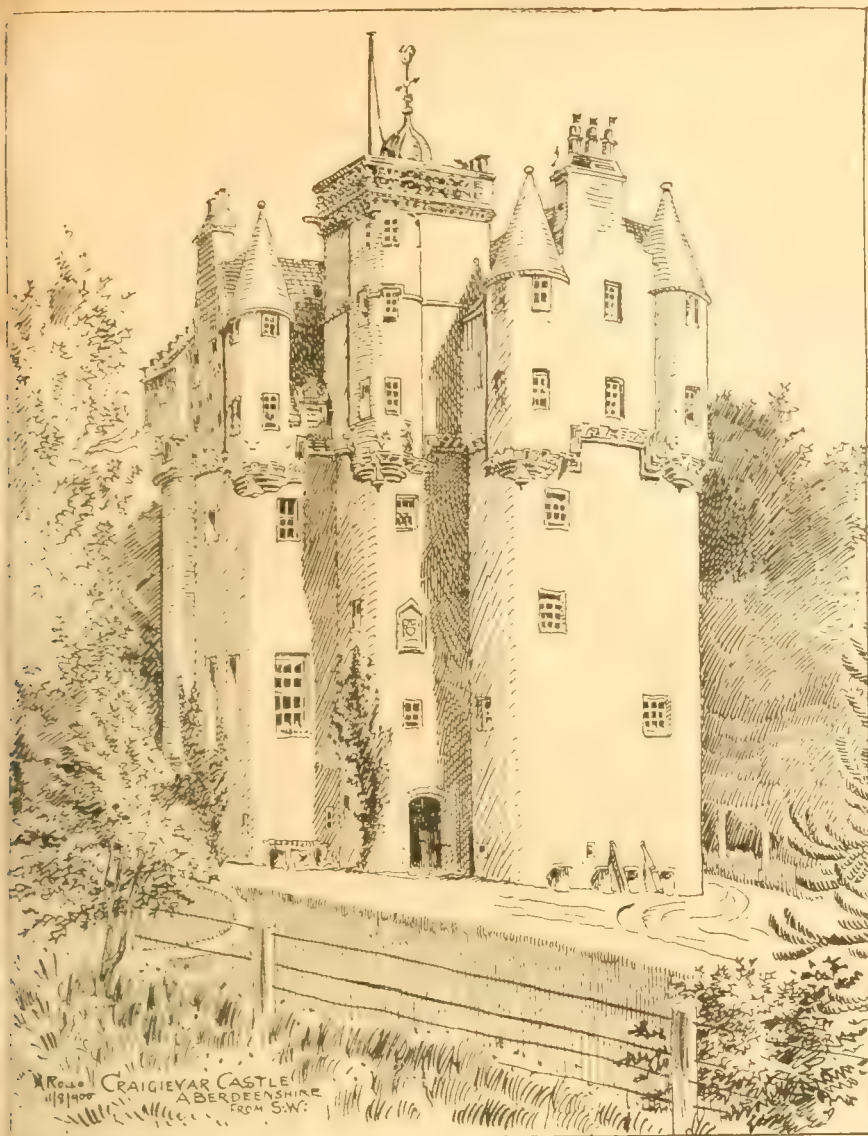
change in materials used in the erection of buildings. Stone, brick, concrete, marble, terracotta, and wood have been the materials at command, and although the manner of working them has varied, this has been brought about largely by the social condition of the period. In the 20th century we can dream of no fresh addition of any material which is likely to revolutionise form. Steel we have already at our disposal, but one can hardly imagine that in works of pure architecture it will ever oust the older materials, although it has almost completely done so in the domain of engineering. The use of wood in buildings seems likely to be less and less adopted in interior fittings, and it is doubtful whether many good substitutes for it may not be found, especially in such parts of a building as floors. This is foreshadowed for us in the construction of modern hospitals where the floors are in most instances made of some non-absorbent material, of a concrete nature, which can be thoroughly cleansed. In some modern buildings which are not hospitals this method has been adopted. In the Great Central Hotel, London, there is no wood used except for doors and windows, and there is really no reason why any architectural features except doors should be of wood. In the hotel mentioned the floors are of steel joists and concrete, the upper surface covered with mosaic, and the skirtings, which in most houses are of wood, are of cement. Instead of the objectionable wooden skirting, behind which are the usual dirt-traps. It does not seem that expense stands much in the way of the adoption of solid concrete floors, and the latest decision of the London County Council permitting fireproof floors to be constructed of fir joists and concrete has much reduced the cost of such work. One element of inflammability is therefore done away with, besides placing the building in a much better sanitary condition. For all buildings the tendency is to cultivate the use of fire-resisting construction, and there can be no doubt that this will be greatly extended in the future.

VENTILATION.

Ventilation in general will no doubt proceed on lines of general advancement, but except in public buildings nothing that could be called mechanical ventilation will be attempted, the expense of such systems being too great. In theatres, music-halls, public assembly-halls, churches, &c., it may confidently be asserted that great improvements in the proper provision of pure air will be effected. It certainly does seem a curious thing that although the science of ventilation has passed the preliminary stages, and may now be said to be an exact science, yet the amount of air necessary to be pumped into our meeting-halls and churches is not regulated by any Act of Parliament. It would therefore appear that the legislature does not believe fresh air to be a necessity to existence or even to good health, although it may be observed that the Houses of Parliament are probably the best ventilated buildings in the land. Our Building Acts and Public Health Acts regulate the construction of buildings, and provide in special cases for a certain amount of cubic space per person; but as regards the ventilation of public meeting-halls, they are practically inoperative. The improvement which may be expected to accrue to the health of the community at large by breathing fresh air, properly warmed and admitted without draught, when crowded together in large numbers is not to be overestimated. It is certain that such provisions cannot be much longer omitted from the Public Health Acts, and the present disgraceful condition of our public meeting-halls will then be altered for the better. We have been termed "a nation of shopkeepers"; but I think a more appropriate term, at least during a certain proportion of the day, would be a "nation of lookers on," and I am bound to say that I think this national characteristic, which, be it said, we hold in common with other nations, will extend. The increase in the numbers of theatres, music-halls, and concert-halls which will be erected to supply this demand will probably be very large, and even the small provincial towns may be expected to be provided with such buildings, properly ventilated according to the latest sanitary knowledge in ventilation.

(To be concluded.)

The corporation of Rochdale have adopted plans by Mr. Jesse Horsfall for the extension of the free public library, at an estimated cost of £5,000.



ROSS. CRAIGIEVAR CASTLE, ABERDEENSHIRE.
1914/100

CRAIGIEVAR CASTLE, ABERDEENSHIRE.

THE FOREMOST among the castles erected during the culminating period 1542-1700 A.D., according to McGibbon and Ross, "The Castellated and Domestic Architecture of Scotland," Vol. II., Craigievar Castle is typical of the peculiarly Scottish style, and dates from 1610, though completed, as would seem to be indicated by the records of various shields and coats-of-arms throughout the building, in 1626 by John Forbes, of Menie, who had, in the interim, purchased what remained of the originally extensive estate. Lord Campbell, the lineal descendant of this John Forbes, is now in possession. The very prominent turrets, and the ornamental gargoyles—ornamental, for here they serve no useful purpose, being placed in some cases as far as two stories below the eaves—are features borrowed from the preceding phases of the style, though, on the other hand, the ogee roofs to the turret turrets, and the balustraded parapets, could indicate a leaning towards the Renaissance, which, later, displaced altogether the Gothic element in the Scottish style. The castle stands midway between the villages of Lumphanan and Haddon, and almost equidistant also from the rivers Dee and Don, which at this point are about twelve miles apart. Although erected with much more attention to domestic comfort than were the earlier structures of the style, the castle was yet in some measure fortified, for a part of which, including an angle turret at the doorway, remains inclosed the courtyard, in the centre of which stood the building, and loopholes for musketry may still be observed within the castle turrets, though they are now hidden on the exterior by a coating of rough-plaster. To fit the building for a modern habitation, the windows have almost all been enlarged; and in 1826 a new roof was erected. Also at this time probably part of the top floor was inserted, giving additional servants' accommoda-

tion. At one time the north-west angle turret, which had fallen, was replaced by a square turret, carried up on one side as a crow-stepped gable. It is peculiar, though perhaps not exceptional, that the castle has still but the original one door. The mushroom-shaped stones against the walls of the castle have simply been placed there for ornament. They originally were used as supports for the bearers on which hayricks were built.

As regards the interior, the dungeons in the basement are now given over to the offices, which doubtless formerly stood in the courtyard. The holes through which food was conveyed to the prisoners can yet be seen in the barrel-vaulted granite ceilings. The castle is built of rough granite rubble, of slightly reddish tint, as seen in the exterior dressed mouldings, and this is exposed in the interior walls of the basement. It is supposed that the straight, or "scale" stair leading from entrance lobby to the principal floor was inserted about 200 years ago, the great lintel over the hall fireplace being unfortunately cracked across during the operation. The banqueting hall retains its former arrangement and decoration in as nearly perfect a state as could well be expected. The hall is a similar feature to that at Haddon Hall, of the first part of the 16th century, the "minstrels'" gallery of Haddon being here styled the "Pipers'" gallery. In Craigievar the ceiling is barrel-vaulted, in granite, and groined in the central part, the whole being encircled with plaster panelling and ornament. The plaster overmantel is evidently of somewhat later date than that of the founding of the castle; the decoration, representing the Royal arms, is remarkable in that the lion and unicorn are on the opposite sides to those on which they are now invariably shown. A granite turret stair, of curious double construction, leads from the principal floor to the bedroom floors, which are also gained by a private turret stair at

the north-west angle of the hall. The castle was measured jointly, in the summer of 1899, by Andrew Rollo and James Smith, at that time students of the Glasgow School of Art, the drawings illustrated, with the exception of the view from S.W., being by Mr. Smith. A. R.

THE SOCIETY OF ARCHITECTS.

THE monthly meeting of the Society of Architects was held on Thursday evening in last week at St. James's Hall, Piccadilly, the President, Mr. T. W. L. Emden, J.P., L.C.C., in the chair. The hall was filled with members and visitors, the latter including a number of ladies. The President feelingly referred to the death of the Queen, and moved that a humble address be presented to his Majesty assuring him of the respectful sympathy of the Society with him in his great sorrow. This was seconded and carried in silence. Five nominations of members and students were read, and a number of donations to the library were announced by the secretary, Mr. C. McARTHUR BUTLER, F.S.A.Scot.

DESIGNING SMALL HOUSES AND COTTAGES.

Mr. RAYMOND UNWIN, of Buxton, then read a paper prepared by himself and his partner, Mr. Barry Parker, on "The Art of Designing Small Houses and Cottages." The paper, which was illustrated by over sixty excellent lantern views, was published in *extenso* in our last issue, p. 183-5. At the close Mr. HAROLD MOORE, F.S.I., proposed a vote of thanks to the lecturer, and incidentally expressed his regret that Mr. Unwin had not definitely dealt with the question of cost. The suggested courtyard would often be very desirable; but it might in some cases involve too great an outlay. Certainly, the designs shown exhibited a great deal of variety, but the great point would be whether the original owner could afford the expense necessary to carry out one of those designs in the small class of houses and cottages.

Mr. W. R. MALLETT, F.S.I., in seconding the motion, observed that Mr. Unwin had given them many ideas of originality, and of a character and originality architects might well be asked to follow. He agreed with the author's suggestions in the main. There was, it seemed to him, a good deal of difficulty in bringing the hall forward, and, again, it was an open question whether rooms should be cut up as proposed. Most modern architects had been brought up in the idea of having rooms broad and high, and everyone tried to make rooms of wide proportions. When the apartments were cut up as in some of these plans, there was a risk of not providing sufficiently good rooms, and certainly it ran counter to current aims. Mr. R. LANO PEARCE thought the lecturer had overlooked one point—the desirability of providing a staircase for the use of the staff of the house. It was unpleasant in a small house to have a servant running into the hall with her broom or pail, and he believed, with a little care and thought, it would be possible to work into most of the plans a back staircase for servants. It would not matter if this staircase was properly framed, so long as it gave private access to the upper floors. Such a staircase was not often found in small houses, but it would be a great convenience. The President, in putting the vote of thanks, added a few hearty words, remarking that Mr. Unwin in his plans had taken a step in the right direction. In acknowledging the resolution, which was passed by acclamation, Mr. UNWIN disclaimed most of the credit for the schemes shown, explaining that all the sketches were the work of his partner, and most of the originality was also due to Mr. Parker. Some criticisms had been passed on the apparently heavy relative cost of such small houses, but he did not think there was much to complain of in this. They had to reckon that a house such as he had put before them was practically furnished when the builders had done. When a house was planned in less than two-thirds of the space originally intended to be devoted to it, of course the house would cost more per cubic foot, but the total outlay would be less than the original estimate. A good deal of space was often cut up to waste in corridors. As to the actual expenditure, two small cottages shown on the screen came out at £470 for the two, giving a good living-room scullery, and outbuildings.

THE FUTURE OF THE LONDON WATER SUPPLY.

At the ordinary general meeting of the Surveyors' Institution, held on Monday last, after the President had moved, and the members had approved, an Address to his Majesty the King, the discussion of Mr. Middleton's paper was resumed by Mr. W. Hunter, who, speaking as a colleague of Mr. Middleton's, agreed, of course, with his general conclusions, especially as regarded the supply which it was possible to derive from wells. The paper, it appeared to him, had been justly described as raising the question whether we should look for our future supply to the sources at our doors, which the author had shown to be amply sufficient to meet all likely needs for many years to come, or go to Wales or elsewhere for an expensive supply of not necessarily better water. Lord Balfour's Commission and the official examiners of water agreed in describing the Thames water as being of exceptionally good quality, and since, in 1894, the Thames Conservancy had acquired increased powers for preventing pollution, they had used them with such good effect that the quality of the water—the raw water in the river—had immensely improved. Thirty-five gallons a head per day had been mentioned as a standard; but many towns did well with less, and he was sure it would be possible, with increased precautions against waste, to considerably reduce this amount. The question of water supply was, he thought, a national one, and should be dealt with on national lines, by which the claims of all cities, towns, and districts could be fairly considered and met. An important question was, Which was the least expensive method by which London could be supplied in the near future, or provision made for the more remote needs of our successors? The answer depended on the length of the period for which a supply was to be provided. Lord Balfour's commission dealt with the next 40 years, which seemed ample provision; but Lord Llandaff's commission anticipated the demands for 50 years. Mr. Hunter then went at some length into estimates for the probable cost of the Thames scheme, and compared them with similar estimates for the Welsh scheme. For 121 million gallons per day the Welsh scheme involved an expenditure for works, interest during construction, capitalised cost of pumping and maintenance, of nearly 21 millions; while the Thames scheme, under the same items, showed a total of 9 millions. For a supply of 224 million gallons per day, the Welsh estimate, including the above items, was 37 millions, and for the Thames scheme 17½ millions—a proportion in favour of the Thames of 2½ to 1 in the former case, and 2½ to 1 in the latter. Lord Llandaff's Commission, treating the figures in a different way, by calculating the sum which, invested in a sinking fund, would pay for the works during construction and maintenance, arrived at a proportion of 2½ to 1 comparing the schemes. With regard to Professor Robinson's scheme, it must not be overlooked that all the charges for maintenance, working, and interest on capital sunk, would apply to this as well as to any other scheme. A great objection to the Welsh scheme was that it could not be carried out by instalments, as was necessitated by increase of population, but must be done now, once and for all, the burden resting on the present ratepayer, and the benefit not accruing for possibly ten or twenty or more years. He thought it a mistake to class all water directors and shareholders as persons out of all sympathy with the public. It was their business to provide a good supply, and he thought the London companies showed an example of what a city or urban water supply should be, both in quantity or quality, which would compare favourably with any large town in Britain, or even in the world.

Mr. Wheeler, K.C., speaking, not as a water expert, but as one who had taken very considerable part in the Government of London, said: The whole matter seemed to him to be at present *in nubibus*, and the calculations to be based on some purely theoretical estimate of what the population of London might possibly be in, say, 50 years. He had a profound distrust of statistics, especially when they were founded on mere conjecture, and he very much doubted whether the increase of population within the necessarily limited area of London would ever reach the proportions which Lord Balfour's commission had reckoned upon. It might well be, as a previous

speaker had said, that among the upper classes the consumption of water was greatly in excess of the 35 gallons per head per day, which has been laid down as an average; but the lower classes of a great town, though Niagara were let loose among them, would never use as much water as was reasonably needful. So he thought the 35 gallons a very fair standard, which, with reasonable precautions against waste, might be reduced. One source of wasteful working was the use of twice-purified water for cleansing the streets and washing down the drains. Raw Thames water would do quite as well. With regard to schemes for the supply of our progeny 60 years hence, he could see no moral or logical obligation cast on us to supply the possible needs of an increased population which might never come into existence.

Mr. W. H. Wilkins said that the question had unfortunately been made one of party politics, and it had thus become somewhat difficult to find anyone who would discuss it in a dispassionate manner. The two commissions had dealt with the subject in a most impartial manner, but still their conclusions were not universally accepted. The problem under discussion was, he took it, the future supply of London; and, this being so, it seemed to him that all the available statistics were merely matters of speculation. How was London likely to grow? When would it reach a point of growth when a new supply was necessary? The quality of the present supply, now that the Thames Conservancy had new powers, seemed to be all that could be desired, and the quantity, Mr. Middleton assured them, was sufficient for years even on the most extravagant estimate.

Mr. B. Ellis, speaking on the matter merely as a practical inhabitant of London, said he feared there was a vague idea in some persons' minds that if only we went to Wales for water we should there find an inexhaustible supply; but Mr. Middleton had disproved that, and had shown that, with regard to cost, the Welsh scheme must be more expensive than a Thames and sea scheme. As having had to do with the construction of many waterworks in London and elsewhere, and in view of the cost of the Manchester and Birmingham aqueducts, he was convinced that Thames water would be the cheapest.

Mr. R. Baldwin Wiseman said that the comparative value of pumpings from chalk and sandstone was sometimes insufficiently considered. In the sandstone there was a free flow through the interstices between the grains, while in the chalk the flow was much more complicated and devious, owing to the capillary action of the pores. Experiment had shown that a sample of chalk from the Whitewells well of the New River Co. had parted after 114 days' drying, with over 2½ gallons of water per cubic foot, nearly all of which it regained on being re-wetted, the presence of air in the pores preventing its taking up the full original quantity. The advantages of chalk water for drinking purposes outweighed, he thought, the disadvantages in its use for boilers and for cooking.

Mr. T. Hennell, after referring to the difference in the references to the Richmond, the Balfour, and the Llandaff Commissions, expressed himself in favour of a system of storage by gravitation, by which water could be taken at the time of flood, and returned in time of drought, thus equalising the flow of the river at the Water Company's intakes; but he thought that storage and river conservancy should be both in the hands of the same authority.

Mr. C. C. Hutchinson agreed that the one point on which the whole matter turned was whether it was wise to abandon the present river supply, which would certainly be adequate for at least some years to come, for an expensive and possibly unnecessary scheme. One little point he would call attention to. A previous speaker had referred to the 100 gallons per head in America as an indication of superior cleanliness, but 100 American gallons were equal to but 80 in England. The present system of filtration he believed to be very nearly perfect, the organisms which might be dangerous being reduced from, say, 10,000 in the cubic centimetre to less than 20. And even the Welsh scheme was not necessarily a guard against all pollution. A single shepherd on the hills might introduce disease into the whole of London.

Mr. Middleton, in reply, said that Mr. Baggally's phrase, which had been quoted by another speaker, exactly summed up the aim of his paper. "Shall we abandon what we have and go elsewhere at an expenditure which must be

burdensome?" It had been said by Professor Robinson that he advocated a different system of storage from that which he (Mr. Middleton) recommended; but, as a matter of fact, he had carefully abstained from recommending any system. He simply said that by means of adequate storage, a supply could be found for a given population. Professor Robinson was made to say, possibly by a misprint, that the requisite storage for 300 million gallons a day would be 17½ millions; but what he had said was 17,000,500 millions. The geological question was outside the scope of his paper. The statement which had been made that the minimum flow in the Thames in September, 1898, fell to 42.3 million gallons, instead of the minimum of 200 millions, was so far correct, but gave an erroneous impression, for the quantity pumped by the water companies during that month was some 212 millions daily. The maximum flow of the Thames was 20,000 million gallons. In giving his figures for the increase of population he had been careful to take, and provide for, the highest possible estimate; but, as he had said, he did not believe that those numbers would be reached in the time named, if ever they were, but he had endeavoured to prove that, taking the rate of increase to be the same as that between the years 1881 and 1891, even in that very unlikely event, there would be ample water supply in the neighbourhood of London to meet all its demands for many years to come.

THE STATE OF LONDON STREETS.

At the Parkes Museum, Margaret-street, W., and under the auspices of the Sanitary Institute, Mr. Thomas Blashill, F.R.I.B.A., formerly superintending architect to the London County Council, read a paper on Wednesday, on "The State of London Streets." Sir Alexander R. Binnie presided. Mr. Blashill said that if he asked them to agree with him that their streets were dirty and ought to be cleansed, it was because he could see the dirt and knew that the means of cleansing were well within their reach. He would not say, as some had said, that London streets were the dirtiest of any to be found in the cities of Europe; but amongst the great Continental towns that he had seen, whether capitals or not, there was nothing similar to them. In all such towns the streets, however they might be paved, were kept clean, chiefly by manual labour and the free use of water. The slush in their own streets, however, even in their best thoroughfares, except in the City, usually covered the roadway so that it was impossible to cross it without gathering up a material portion to be carried home. Their clothes were fouled and the dust in the street was allowed to blow about in clouds. He gave a few examples of the effectual cleansing of the streets of Continental cities, such as Paris, Vienna, Berlin, Prague, and Brussels. Thirty years ago the condition of the roadways in London, both as to paving and cleansing, was a matter of serious consideration. He had taken some interest in the matter, and sketched the design from which was made the "street orderly bin" that was now used on nearly all their asphalted roadways, and might be seen in the chief Continental cities. In Glasgow they had receptacles sunk in the pavement. Sometimes trucks or barrows were used, as in Holland, where the town streets were admirably kept. He was convinced that for town thoroughfares that was the only satisfactory principle. The work of a scavenger should no longer be considered of a low class, or even "unskilled"; it should be well paid and made to attract respectable, able-bodied men. The horse-broom, where needed, should be used with discretion, and kept in good order. He offered suggestions as to the material for roadways, and said that "macadam" was never carried out as the inventor intended. He was reminded by a paragraph in *The Times* of a scheme that had often seemed to him feasible. At Hamilton, in Ontario, they had, after long experiment, adopted a macadam of limestone saturated with boiling tar. He thought that if granite stones which would pass through an inch and a half ring were mixed dry with boiling pitch, as was done with large gravel, and laid on a firm bed, then sprinkled with fine chippings and lightly rolled, a good hard roadway would be obtained. He expressed a strong and unhesitating opinion that the dirt in their streets, apart from odious comparisons, had increased, was increasing, and ought to be diminished.

In the course of the discussion which followed, Major Lewis H. Isaacs (Holtborn) said the lesson that he learned from the Continent—where, however, the circumstances were different—was that the most important factor was the employment of water.—Mr. Emery, for 30 years a member of the Marylebone Vestry, and now a County Councillor, attributed the state of the streets to the habits of the inhabitants in throwing refuse into them, and urged that the police should enforce their regulations more rigidly.—Mr. Blair (St. Pancras) also thought the conditions on the Continent, with its toy towns, were different, and that the fouling of the streets in London was due to a great extent to the refuse material placed in them by shopkeepers and residents. Restrictions which were tolerated on the Continent would not be borne here.—Mr. Weaver (surveyor to the Borough Council of Kensington), who, with several other parish officials, complained of the disinclination of the local authorities to supply sufficient funds, thought, however, the evil was exaggerated. He condemned the employment, from humanitarian motives, in the removal of snow of worn-out men. The disturbance of the streets was also a difficulty in the way of officials.

The chairman, in moving a vote of thanks to the lecturer, said it must always be remembered in regard to cleanliness that we were in London under the disadvantage, not present in Continental capitals, that we lived on a clay subsoil, and the breaking up of the surface immediately produced layey matter and mud. No doubt the water washing of streets was the plan of the future; but all the authorities would have to work together so that the work was done in an economic manner. As to subways in new streets, they could be constructed, but in old thoroughfares they did not belong to the public, as Parliament had given powers to private companies, who would have to be provided with new pipes, &c., at great cost.

THE CEMENT TRADE.

MESSRS. TULLOCH AND CO.'S annual report states that throughout the major portion of the year just closed the trade was in a far from a prosperous condition; over-production was a marked feature, leading to the inevitable consequence of accumulated stocks and cutting competition. In this country the feature has been the formation of the Associated Portland Cement Manufacturers, Ltd.—a company taking over nearly all the chief works on the Thames and Medway, also certain inland mills. Home consumption not increasing in proportion to the larger production naturally affected selling values, which ruled low during the summer and early autumn—varying from 24s. to 27s. 6d. at the works. Owing to the high cost of fuel the London mills were hardly in a position to meet consumers without making a loss. Precisely the same conditions only perhaps more stringent—apply to manufacturing cost during the current year. Belgian, and, in a lesser degree, German cements competed for British trade, about 100,000 tons having been sold in the United Kingdom. Export prices started with values ranging from 6s. to 6s. 6d., declining to as low as 5s. 9d., but steadying during the autumn to 5s. 3d. and 6s. 4d. Since the combine was established no actual official announcement as to prices has been made, but it is anticipated that rates will rule from 6s. 6d. to 6s. 9d. f.o.b. London for standard brands. Exports from the United Kingdom were 359,982 tons, showing a slight increase on 1899, but not sufficient to keep progress with the larger output. Exports to the United States have been well maintained, but chiefly owing to an improved demand from the Pacific Coast. South Africa—a market from which much is expected—took less, whilst shipments to India showed a fair increase. Australia and South America were normal customers. Shipments to Canada showed a decided increase in previous seasons. As regards the foreign position in Germany, an epidemic of over-production, coupled with tightness of money, has caused great depression throughout the trade. The remarkable growth in the cement industry of the United States of America is worth recording. To-day the American mills are producing on a low estimate fully 10,000,000 barrels yearly. New mills are springing up in every direction and a large amount of capital is being sunk in this industry. Many produce only natural rock cements, scarcely suitable for reliable work,

but no doubt the ingenuity of the American cement makers will overcome in time the difficulties in manufacturing a uniform cement. Messrs. Tulloch regret that their forecast of twelve months ago as to over-production and decline in prices should have been fulfilled, but venture the opinion that a more prosperous condition will now prevail, and that prices will advance rather than decline during the present year. We are inclined to doubt it.

WESTMINSTER ABBEY.

THERE is no truth, of course, in the statements which have obtained currency in the daily newspapers as to the whitewashing of the interior of Westminster Abbey, though the surveyor in charge of the fabric, Mr. J. T. Micklethwaite, F.S.A., in response to our request for authoritative information as to the process intended to be used for the preservation of the masonry, has not vouchsafed any details of what is to be done. In dealing with a great national monument like Westminster Abbey, it is as well to let the public know what is intended: otherwise incorrect and irritating paragraphs are sure to be circulated. That somewhat serious disintegration of the surface of the stone of which the Abbey is constructed has of late years largely developed and rendered renovation necessary every one is aware. Sir Gilbert Scott and Mr. J. L. Pearson renewed, in consequence of its structural weakness, much of the exterior ashlar, thereby bringing upon themselves the severe condemnation of the anti-restorationists. We presume that under the new régime a less drastic scheme of repair will be tried, and it is more than likely that the whitewash scare has originated in a proposal to apply some preservative solution to the masonry with the object of arresting further decay. There need be no mistaken secrecy about the matter, however, and it was solely with the object of assisting to allay public anxiety that we applied to Mr. Micklethwaite for more exact particulars. In common with a vast number of people who have a genuine interest in the historical architectural value of our national monuments, we should view with dismay, of course, any tampering with the glorious colour and time-worn surface of the stonework of the interior of Westminster's great church. We do not for a moment suppose that the present surveyor would be party to any such policy of destruction; but after the manner in which he led the attack on the late J. L. Pearson during the structural reparations of the west front of Peterborough Cathedral a few years ago, it is only reasonable that inquiries should reach us, and some degree of anxiety be experienced. Any such scheme as the anti-restorationists advocated at Peterborough, for draining out the perished rubble and mortar behind the ashlar, preparatory to grouting in liquid concrete, would, we are convinced, be a most risky proceeding—in all probability result in forcing out the faced work, and at best forming an unreliable and composite construction, which would be treacherous to a degree.

The death is announced of Mr. Charles Lofas Tomlinson, builder, of Manchester, in his 54th year. He was a native of Hulme, and after passing through the Manchester Grammar School was apprenticed to a plumber. Later he became a builder and property owner. From 1898 to 1900 Mr. Tomlinson was chairman of the Chorlton Board of Guardians, of which body he had been an active member for the past seventeen years.

The unveiling of a memorial bust of the late Mr. Richard Cadbury, founder of the Friends' Hall and Institute, Moseley-road, Birmingham, took place on Friday. The bust is placed in the crush hall, and is the work of Mr. Brock, R.A., the sculptor of the Queen's statue in Birmingham. It is of white marble, and stands on a marble pedestal with black stone base.

Nearly half the sum representing the total of last week's sale at Tokenhouse-yard Auction Mart, was the outcome of a two days' sale of West-end properties. Apart from these transactions very little business was done, though some weekly houses in thickly populated districts changed hands at fairly good prices. Altogether the sales amounted to £92,151.

A meeting of the Norwich plumbers was held at the Technical Institute, in that city, on Friday, in support of a movement designed to induce the Government to bring in a Bill making the registration of plumbers compulsory.

OBITUARY.

THE death occurred on Monday of Mr. DONALD A. GOW, superintendent of the works of the Heriot Trust at Edinburgh. A native of Blair Athole, Mr. Gow was trained in the office of Mr. Carrick, architect, Glasgow, and went to Edinburgh in 1879 as assistant to the late Mr. Chessar, superintendent of work for the Heriot Trust. On the death of that official in 1889, Mr. Gow succeeded him, and has performed the duties of the office with much acceptance to the Governors. His main duties consisted in the drawing of feuing plans and in looking after the properties of the Trust; but his abilities as an architect was also shown in the designs which he prepared for the Examination Hall at the Heriot School, with features adapted for the main building, and also in the technical school on the same grounds. These are his chief professional memorials. Fond of shooting as a recreation, he was one of the original members and office bearers of the Edinburgh Gun Club, and he was also a golfer of some ability. He has passed away at the comparatively early age of forty-four years.

THE death, under painful circumstances, is announced of Professor MAX VON PETTENKOFER. He was born at Lichtenheim, on the Danube, in 1818, and studied medicine at Munich, Gressen, and Würzburg, but applied himself mainly to hygienic studies. His researches convinced him of the value of sanitation, and especially of pure air and water, in securing health. To his influence were due many improvements in the hygiene of German cities. Pettenkofer became the apostle of a public-health movement, and professorships in the subject have been established at most of the German Universities. He was the author of a long series of scientific writings, and is honoured in Germany as the founder of scientific experimental hygiene.

CHIPS.

The Town Council of Sutton Coldfield have decided to adopt a scheme for draining Little Sutton-hill and Mere Green at an estimated cost of £2,400.

A Parliamentary paper just issued shows that of the 177 tramway undertakings in the United Kingdom, 70 belong to local authorities. The total length of the line open for traffic is returned as 1,777 miles, and is almost equally divided between single and double-line systems.

Mr. Charles Forman, the well-known Glasgow civil engineer, died at Davos Platz, Switzerland, on Friday. The deceased gentleman was instrumental in carrying through Parliament many important railway schemes in the West of Scotland, and was well known in Glasgow and London. He was 48 years of age.

From among 85 candidates the County Council of Northumberland have elected Mr. Joseph Alfred Bean as county surveyor.

A stained-glass window, the gift of friends in memory of the late Canon Douglas, a native of Market Harborough, was unveiled on Sunday in the R.C. Church of Our Lady of Victories at Market Harborough. The subjects treated in the lancets are St. Peter, the Prince of the Apostles, and St. Edward the Confessor, the King of England, and the Canon's Patron Saint.

A new electric car was run over the three unopened routes of the Sunderland tramways on Friday. A single-deck car was used, as this is the type necessary for the Tatham-street section, on account of a low bridge. On the trial there were present Mr. J. F. C. Snell, borough electric and tramways engineer; Mr. Andrews, tramways engineer; Mr. J. R. Chrisp, clerk of works; and Mr. W. Morrison, traffic manager; and for the contractors (Messrs. Dick, Kerr, and Co.), Mr. W. H. Begg, one of the firm; Mr. J. H. Hay, of the permanent way department; and Mr. Fielder Smith, of the overhead department.

On Thursday afternoon the Bishop of Guildford opened St. John's Mission Hall, in French-street, Southampton, on the site of the old church of St. John's. The work has been carried out by Messrs. Jenkins and Son, under the direction of Messrs. Mitchell, Son, and Gutteridge, architects. The hall, which is 53ft. by 30ft., is built of brick, and has seating accommodation for 208 persons. At one end there is a reredos on a platform. The building has cost about £1,300.

At the meeting of the town council of Cardiff on Monday some discussion took place as to the corporation officials' salaries, and it was decided to increase the borough engineer's salary for tramway purposes £100, rising £50 yearly, to £250 per annum, making his total salary £1,250.

LEGAL INTELLIGENCE.

CLAIM OF A PLYMOUTH ARCHITECT AND A JURY VERDICT.—KEATS v. RENDLE.—At the Devon Assizes held at Exeter on Friday last, this case was heard before Mr. Justice Day and a jury. Lord Coleridge and Mr. W. E. Lloyd appeared for the plaintiff; Mr. J. A. Foote, K.C., and Mr. Bodilly for Mr. C. B. Rendle; and Mr. H. E. Duke, K.C., M.P., and Mr. Clavel Salter for Mr. E. M. R. Rendle. Lord Coleridge said the plaintiff, Mr. J. H. Keats, an architect, brought an action against the defendants in respect of commissions, and for wrongfully ceasing to employ him as an architect. The defendants in 1885 were owners of the Vanstone estate, and they were desirous of having this estate laid out and prepared for sale in plots. They engaged the plaintiff as architect for this estate, and he was empowered to sell all the various plots at a price to be agreed upon, and that he should have a fee by way of commission on the sale of each plot. He was to have four guineas in respect to the purchase of each plot. The defendants, however, relinquished his services, and it was alleged, violated the terms of agreement, and hence the action. The plaintiff said he had been connected with the estate since 1875, when he prepared the first plans. In February, 1886, he made some sales, and he had his commission of 5 per cent. This was the same charge that he received on other estates for which he acted. The conditions of his appointment showed that, in addition to the commission from the vendors, he should receive four guineas on each plot, and the solicitors three guineas, these sums to be paid by the purchaser. Contracts were signed to this effect. Up to 1896 he discharged the duties of architect to the estate, selling several lots, some to Mr. William Law. He did all that was necessary to get the estate ready for building purposes. Except the 5 per cent. commission and fees from the purchasers he received no other payment. In October, 1896, he received notice from Messrs. Rooker, Matthews, and Co., just at the time he was treating with Mr. William Law for the sale of a large quantity of the estate, dismissing him as architect. Mr. Law told witness he would only negotiate with him. At that time he believed Mr. Law was willing to purchase a part of the estate. If the estate had been sold at his figure of £12,000, he should have received £600. The land was practically sold for £12,000; but the necessary document had not been drawn up. Since 1886 he had laid out the estate, but received no payment except commission on sales. Mr. W. Ham had been paid £700, he should estimate. He had a similar arrangement with two of the largest employers in Plymouth. He did not think it was an odd transaction that he should be employed as architect until the whole of the estate was sold. His Lordship said there was no agreement between the defendants and plaintiff. Lord Coleridge said the agreement was a verbal one made on Feb. 3, 1886, and confirmed by correspondence. Mr. Russell Rendle, retired medical practitioner, of Plymouth, gave evidence that with his brother and some others he owned this estate. He employed the plaintiff as architect in the ordinary way, paid him his fees from time to time, and commission for sales he effected. He gave the plaintiff due notice, and dispensed with his services. Since then only four plots had been sold. Mr. Foote submitted that Mr. C. B. Rendle assigned his interest in the estate in 1891, and he pleaded the statute of limitations. His Lordship ruled that C. B. Rendle had no case to answer. His Lordship said the claim of the plaintiff was an unheard-of claim, that he should be the permanent architect to an estate and not liable to dismissal. His Lordship added that he had never heard of such a case until this one was started. After fifteen minutes' private consultation the jury found for the plaintiff. Damages £200. Mr. Duke: I ask for judgment for the defendant. His Lordship: You shall have it. On the application of Lord Coleridge his Lordship certified for a special jury.

ISSUE OF ARCHITECT'S CERTIFICATE AFTER SERVING OF NOTICE TO TREAT.—LOLE AND LIGHT-FOOT v. VIDAL.—The Official Referee, Mr. Verrey, heard on the 6th inst. this action, brought by a firm of builders at Chelsea to recover £485 10s. and loss of profit on a building contract, and raising the question whether architect's certificates should be issued after a notice to treat had been served on the owner. Mr. Morton Smith appeared for the plaintiffs; the defendant, who conducted his own case, had paid £260 into Court. Mr. Morton Smith said that in the latter part of 1899 negotiations took place between the plaintiffs and defendant as to rebuilding No. 51, Shaftesbury-avenue, and other premises in Wardour-street. The defendant ultimately accepted the plaintiffs' tender of £610 for the work, but afterwards altered his view as to what was required to be done, and on March 22, 1900, the parties entered into another contract for £872, including an addenda which contained priced items commencing with the £610. The contract contained clauses stipulating that when, in the opinion of the defendant's architect, work to the value of £200 was done, the contractor should be entitled to be paid at the rate of 85 per cent., that the defendant's architect should give certificates

from time to time, and that after a stoppage for a month the contract could be determined. On April 2, the architect, Mr. J. A. Souttar, authorised the builders to proceed, and they pulled down and cleared away the wall next Wardour-street, the defendant agreeing to pay £50 for it. On April 17 both the architect and the defendant wrote to the builders directing the work to be stopped, as a notice to treat had been served on the defendant, the owner, by the Strand Board of Works, the land being required for widening the street. In consequence the builders stopped at once; but the plant and materials were left on the site for about six weeks. On May 7 the builders applied for payment of £485 12s., being the account rendered for work executed up to the date of the stoppage of the work. The works having been stopped one month, and no further orders to proceed being given, the contract was determined. On May 24 the defendant's solicitors wrote informing them that items in their claim were not covered by the architect's certificate, and mentioning the compensation claim against the Strand Board of Works. The builders replied that the compensation claim had nothing to do with them, and required payment by the architect's certificate. On June 25, the architect made out a certificate for £250 (including £50 for the wall), and again, on July 20, gave a final certificate for £100, intimating also that any claim for loss of profit by non-completion of the contract was not within his province. The defendant declined to pay for loss of profit; and thereupon the plaintiffs brought this action. The job was an awkward one to do, as the land was only 8ft. in depth and 48ft. in length, and therefore involved unusual risk and difficulty, and the plaintiffs had put this profit at 15 per cent. on £572, or £85 10s. In the certificates of £350 was included the £50 authorised by the defendant for the party-wall. Mr. Wm. Chas. Lole, a member of the plaintiff firm, said the minimum profit would be 15 per cent. The defendant, in cross-examination, raised the question of the amount of work done. The Official Referee said he could not possibly go behind the architect's certificates, which were binding, both parties having agreed to abide by his judgment. Mr. Henry F. Williams, surveyor, 149, Fleet-street, E.C., agreed that 15 per cent. was a reasonable profit for a builder to expect for work of this character. Mr. J. A. Souttar, 41, Bishopsgate-street Within, the architect for the work, said he was employed in the matter by Mr. Vidal, and exercised his judgment on the amount of work actually done. He obtained the schedule of prices from the builders. He arrived at the opinion that £350 was a fair contract price for the work done, leaving £572 for work under the contract not carried out. A builder would expect 15 per cent. profit on an awkward job like that. The building was up to the ground floor. The Official Referee again said the certificates were binding upon him, unless fraud and dishonesty were proved. The defendant said the party-wall was condemned by the district surveyor. He was afraid the Strand Board of Works would say he was not justified in paying £350 to the builders for the amount of work done, and that there was no evidence to show for it, and not value for the money. Mr. John Andrews, surveyor, 34, Basinghall-street, E.C., said he had valued the work done at No. 51, Shaftesbury-avenue. The Official Referee: I cannot go into that. Witness said he considered a reasonable net profit would be 10 per cent. The Official Referee held that the clause stipulating that the builders could not claim loss of profit if they determined the contract, did not apply. He gave judgment for the amount certified by the architect, £350, and for loss of profit at 12½ per cent., £71 15s., with costs.

A MINORITIES ARBITRATION CASE.—At the London Sheriff's Court, on Tuesday, Mr. Under-Sheriff Borchell and a jury heard the case of "Hickman v. London County Council," a claim for £4,000 compensation by the freeholder of the tenement houses Nos. 14, 15, and 16, Queen-street, Tower-hill, in respect of the compulsory acquisition of that property by the London County Council for the purposes of their Tower-bridge northern approach scheme. The property was purchased by the freeholder, Mr. John Roe Hickman, Linden-lodge, Lee-road, Blackheath, in June, 1880, for £2,550, and was leased to Mr. Alfred Charles de Rothschild for a term of 21 years from December, 1895, at a rent of £110 per annum. The claimant's witnesses had capitalised this income on the 3 per cent. table—33½ years' purchase, £3,666, and had added the usual allowance of 10 per cent. for forced sale. On behalf of the County Council, three witnesses expressed the opinion that the rental of £110 per annum represented the maximum value of the property, which was only worth 20 years' purchase, or £2,200, plus 10 per cent. The jury awarded £3,300.

SUB-CONTRACTORS' RESPONSIBILITY FOR WORKMEN'S COMPENSATION.—Messrs. Neill and Sons, builders, of Manchester, brought an action at Manchester Assizes last week to recover damages for breach of contract from Mr. Hamor Lockwood, a contractor. It appeared that the plaintiffs entered

into a contract with the Lancashire and Yorkshire Railway Company for the construction of certain works, and re-let a portion of the asphalt work to the defendant, a contractor in Manchester, under a sub-contract. In the specifications and conditions attached to the sub-contract there was a clause stipulating that the defendant should include in his tender insurance of the workmen employed by him, there being a condition that the plaintiffs were not to be responsible for any accident which might befall any of the defendant's workmen. During the execution of the work an employee of the defendant's was injured and died. A claim was made by his widow under the Workmen's Compensation Act, 1897, and both the plaintiffs and defendant were made parties to the action, which came before Judge Parry, of the Manchester County-court, sitting as arbitrator. Judge Parry, following a decision of the Court of Appeal, which laid down that a sub-contractor was not an "undertaker" within the Act, awarded the widow £234 damages against the present plaintiff and dismissed the case as against the present defendant. The plaintiffs now sought to recover that sum, together with £31, the costs of the arbitration, from the defendant. Mr. Russell, K.C., argued on behalf of the plaintiffs that the defendant was bound to indemnify them against any claim for damages for injuries sustained by the defendant's workmen. For the defence it was submitted that the defendant, in taking out a policy of insurance, had fulfilled his obligations under the clause in question, and that there was no contract to indemnify the plaintiffs against damages in any action that might be brought against them. Judgment was given for the plaintiffs for the amount claimed, with costs. A stay of execution was applied for and granted.

STATUES, MEMORIALS, &c.

HOVE, BRIGHTON.—A bronze statue of Queen Victoria, designed by Mr. Brock, R.A., was unveiled on Saturday in Grand-avenue, Hove, by the mayoress. The statue, which is 13ft. in height, faces the sea. Around the angles of the bronze plinth are bronze festoons of laurel, and in front a cartouche bearing the letters V.R.I. The pedestal, 14ft. in height, is of grey Aberdeen granite. A bronze emblematic panel, in bas-relief, is in each of the four sides of the pedestal. The front panel represents Empire; in the centre is a female figure, seated, holding with her right hand a pair of scales, and in her left an orb; on her right hand stand figures representing Canada and Australia, while on her left are figures typical of India and Africa. A female figure also occupies the central position of the back panel; the figure is seated, embracing a child, who is sitting on an anvil with an electrical machine in his hands; behind him stands a youth holding a piece of machinery; on the left of the female figure is a boy with palette and brush, at his feet a mallet, chisel, and compasses. The right-hand panel is a symbolical group of Education—a mother with a child at her side, a book upon her knees, which she is teaching the child to read; standing behind them, engaged in study, are three youthful figures. The left-hand panel represents Commerce; in the foreground kneels an Eastern trader, with his wares spread out before him, two merchants standing by; behind is a figure with a vase held in the hand; while in the background the sea is visible, a galley upon it with sails set. Under the back panel are cut the words:—"Born 24 May, 1819. Died January 22, 1901."

CHIPS.

The British Electric Car Company, of St. Swithin's-lane, have purchased about five acres of land near the Ship Canal, Manchester. Works capable of making 120 tramway cars at a time have been commenced. Mr. Charles Heathcote, Manchester, is the architect.

Lieut.-Col. P. G. Van Donop, R.E., and Mr. Trotter, inspectors of the Board of Trade, inspected last week the permanent way and the overhead electrical equipment of the new tramways laid by the Birkenhead Corporation between Woodside Ferry and New Ferry. The inspection proved satisfactory, and a service of passenger-cars has been commenced.

At the last meeting of the Dudley Board of Guardians, the building committee submitted the block plans of the proposed new infirmary, disinfectors, boiler-house, and laundry building at the workhouse, stating that the plans had been favourably considered by the architect of the Local Government Board. It was stated that the new buildings would involve an expenditure of from £63,000 to £70,000. The plan of the infirmary showed 360 beds, the estimated cost of each being from £135 to £140. The laundry was estimated to cost £10,000. Consideration of the question was deferred.

The Board of Trade having refused to renew the license of the Barrow Tramway Company for steam-traction, the steam-cars were withdrawn on Monday and a service of small horse-cars substituted.

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PLAN, MEDALLION DESIGN FOR A CLUBHOUSE. — CRAIGIEVAR CASTLE, ABERDEENSHIRE. — "NORFOLK DAILY STANDARD" OFFICES, NORWICH. — HOUSE AT PINNER.

Our Illustrations.

A CITY CLUBHOUSE: SOANE MEDALLION CONCEPTION DESIGN PLACED FIRST.

THIS design was placed first and awarded a prize of £20. Mr. Mathew J. Dawson is the author of the design. A clubhouse for a large city must have some *raison d'être*, and be made to look like what it is. The building is in reality a large town house on a grand scale; therefore orientation as regards rooms, the site being fixed, is an important matter, and the author, with this idea, located the most important apartments on the south front, especially the morning room, which would not otherwise obtain any sunlight during three parts of the year. The hall is on the Italian palatial scale, including the main staircase, which the author has endeavoured to treat as worthy of such a building, making a feature of the lighting effect. The light in the vestibule is sufficient for the porter and for lighting the steps leading up to the relatively dark outer hall, prior to entering into the principal hall and staircase, brilliantly lit from it above. Facing the entrance occurs the dark cove under the stairs, by contrast attracting attention with the glare of light seen through in the coffee-room beyond, which is the principal apartment of the club. The stranger on entering views the cortile from its vestibule, out of which he is ushered into the strangers' rooms, right and left of the entrance. The exterior has been handled in a broad and dignified manner, with a simple but English character. The entrance is emphasised by a boldly-treated porch of some originality of idea and scale. The two groups above the entrance illustrate the expulsion of Discord on the one hand, and Social Harmony is symbolised on the other. The back elevation is more domestic in character. The plans given show the two principal floors, and the section affords a good idea of the way in which Mr. Dawson worked out his scheme, which has considerable merit.

CRAIGIEVAR CASTLE, ABERDEENSHIRE.

(For description and further sketch see page 223.)

"NORFOLK DAILY STANDARD" OFFICES, NORWICH.

Our illustration of the *Norfolk Daily Standard* new offices shows really an extension of the present premises, which run a considerable distance down the side street, the front portion providing only the accommodation for the editorial staff, and the public entrance for advertisements, &c. The basement, which has been built entirely of white glazed bricks, contains a "Hoe" printing machine, driven by electricity. There is nothing of special interest to be said as to the arrangement of the building, beyond that a very awkward corner site had to be dealt with, and that it was impossible to get any more altitude than the drawing shows. The whole of this front portion has been carried out in brown buff terra-

cotta, supplied by Messrs. Doulton and Co., of Lambeth, and stands on a polished granite base. The roofs have been covered with Cumberland green slates, and the turrets with copper. The bas-relief heads in the main front represent Caxton, introducer of printing, and Defoe, who, so far as can be ascertained, introduced something like a journal or newspaper. The clock, which has been supplied by Messrs. J. Smith and Sons, of Derby, and lighted by electricity at night, is also inclosed in a copper case. The doors, windows, panelling, counters, &c., chimney-piece in the public office, have been executed in mahogany. The walls are covered with wall-hanging, painted. Messrs. J. Youngs and Son, of Norwich, are the contractors. The architects are Messrs. George J. Skipper, F.R.I.B.A., and F. W. Skipper, of Norwich.

HOUSE AT PINNER.

THIS building is in course of erection in "the Avenue," Royston Park, Pinner. The exterior walls are faced with red brick and white rough-cast, as shown. The roofs are to be covered with green slates. Stone is used for the entrance porch and front bay window. The builder is Mr. Charles Eames, of Watford, and the architect Mr. E. B. Wetenhall, of Fitzroy-street, W.

OHIPS.

Dr. J. Ph. Vogel has been appointed to be archaeological surveyor, Punjab Circle, with effect from January 1, 1901.

The salary of Mr. O. M. Jonas, electrical engineer to the Dewsbury Corporation, has been advanced from £250 to £350 per annum.

The inquiry which had been directed by the Local Government Board into the new regulations applied for by the Metropolitan Water Companies concerning fittings, cisterns, &c., was opened on Monday in Westminster. Counsel for the companies denied that they were actuated by any desire to put themselves in a better position as regards purchase in making their proposals. It was urged that the only object was to prevent the great waste of water that occurred, and that new fittings would not be required in cases where those already in existence were sound and effective. Mr. H. C. B. Bowles, governor of the New River Company, was examined, and said that, in his opinion, the cost of putting in new apparatus should fall upon the householder or landlord. The inquiry was adjourned till to-day (Friday).

The first meeting of the shareholders of the company, which has been formed for the purpose of constructing a transporter bridge across the river Mersey between Widnes and Runcorn, was held on Monday in Liverpool. Sir John Brunner, Bart., M.P., the chairman of the company, informed the shareholders that the whole of the capital had been subscribed. The Local Government Board had arranged to hold local inquiries this week, at Runcorn on Thursday and at Widnes on Friday, into the applications of the local authorities of those districts for sanction to borrow money wherewith to invest in that company (Widnes £25,000 and Runcorn £10,000). The board had instructed their engineers, Messrs. J. J. Webster and Wood, to proceed with their working drawings, which would probably be ready within three months.

At their meeting on Tuesday, the London County Council appointed Mr. John Hall Rider, chief consulting and resident engineer for electric tramways and electric lighting under the Plymouth Corporation, as electrical engineer at a salary of £1,000 a year. Mr. S. G. Burgess, secretary and manager to the Middle-Class Dwellings Company, was appointed manager of the new housing department at a salary of £800 a year. It was agreed that the salary of Commander Wells, the chief officer of the Fire Brigade, should be raised from £900 to £1,000.

The Court of Aldermen for the City received, on Tuesday, a letter from Mr. Henry Thomas Gordon, F.R.I.B.A., of Finsbury House, Blomfield-street, E.C., resigning his seat as a Common Commissioner for Coleman-street Ward, owing to the pressure of professional work.

Mr. Henry Willis, head of the firm of Messrs. Willis and Son, organ builders, died on Monday last at Argyle Villa, Bartholomew-road, N.W., in his 80th year.

A joint meeting of the council of the Dundee Institute of Architecture and a Committee of the Graphic Arts Association was held in Dundee on Monday to consider the revival of the proposal to substitute a crown for the cape-houses on the old steeple. From evidence submitted, the meeting was of opinion that it had been the original intention to finish the old steeple with a crown. It was agreed to have further investigation made into the artistic, architectural, and constructive value and merits of the proposal.

COMPETITIONS.

SEVENOAKS ISOLATION HOSPITAL. At their last meeting the Sevenoaks Urban District Council received and discussed a report received from Mr. Young, F.R.I.B.A., the assessor, who stated that he had examined the plans for the proposed isolation hospital submitted by various architects, and he had awarded the prize to the set of plans which bore the motto "Lucidity." He did not think that those plans, or any other set submitted, however, would meet with the approval of the Local Government Board, and he considered that the estimate of the architect whose motto was "Lucidity" was very much below what the actual cost of the building would be. It was understood that the estimate of "Lucidity" was £3,384 18s. 9d. This competitor remarked that the amount would be considerably reduced by having two blocks to contain 22 beds instead of three blocks. Three blocks to contain 22 beds would result in a very expensive scheme. Several members expressed the opinion that the council was not bound, either legally or morally, by the finding of the assessor. Mr. Mann, the council's surveyor, told the council that, having put itself in the hands of an assessor, it was bound by the award of that assessor, but the plans could be modified in any way which was thought fit. It was eventually decided to write the assessor, stating that the council could not accept the recommended design, and requesting him to confer with the members on the subject.

CARDIFF. — Messrs. George H. Oatley and W. S. Skinner, of Bristol, are the architects of the design which the town council of Cardiff has accepted for the new corporation asylum. There were five sets of plans in the second stage of this competition, and the drawings have this week been on view in the Assembly-room of the Town-hall. The exhibition will close to-morrow night. The premium offered was one hundred guineas. Mr. G. T. Hine, F.R.I.B.A., was the professional referee. The building will be erected on the Velindre Estate, and the estimated cost is £235,000.

PROFESSIONAL AND TRADE SOCIETIES.

GLASGOW ARCHITECTURAL CRAFTSMEN'S SOCIETY.

—The usual meeting of the society was held on Friday, 8th inst., Mr. Alex. Davie, I.M., presiding. The subject for the consideration of the members was "Wall Coverings," three lecturers reading papers thereon. Mr. Colin Sinclair, hon. sec., treated the subject of "Limes," and their application to wall surfaces, drawing special attention to the successful use of hydraulic lime plaster. Mr. Robt. W. Horn, A.R.I.B.A., confined his remarks to the use of "Cements" as plasters. In the third branch of the subject, Mr. David Jackson, modeller, lectured on "Patent Plasters."

We regret to hear that Mr. Thomas Wright, the venerable clerk of works for Westminster Abbey, has sustained the loss of his wife after 51 years of married life. Mrs. Wright, who died on the 8th inst. at 16, Dean's-yard, was 78 years of age.

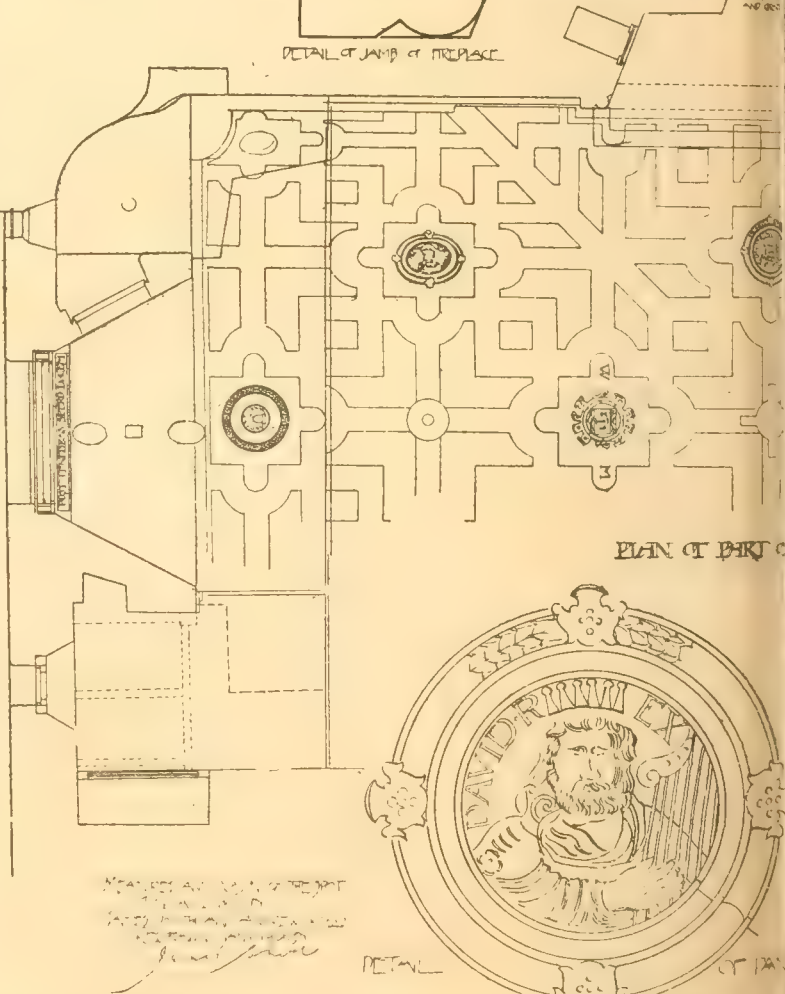
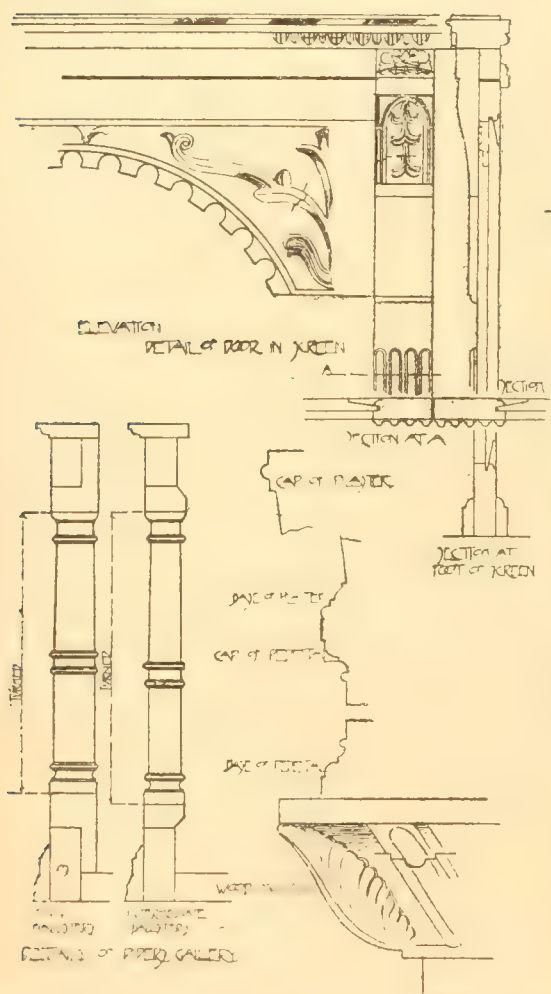
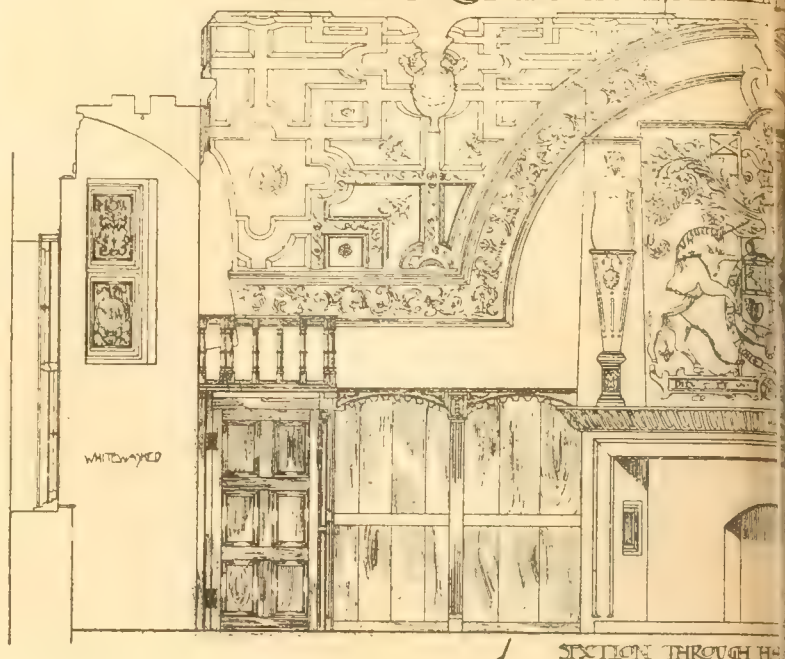
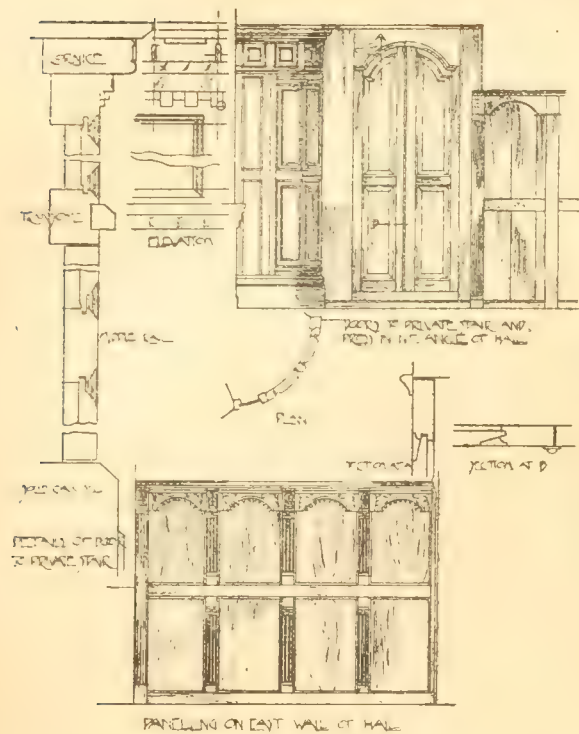
An important scheme of harbour extension came before the Harbour Commissioners of Aberdeen on Monday, when it was agreed to acquire 7½ acres of ground at the south side of the river Dee, east of the Victoria Bridge, and contiguous to the contemplated fish dock. The board's engineer, Mr. R. G. Nichol, C.E., suggests that the whole area from Victoria Bridge down to and including the village of Torry should be bought as essential for the extension and development of the harbour. This area is about 30 acres in extent, and belongs to three owners—the City of Aberdeen Land Association, the proprietors of Balnagask, and the Town Council. For the portion next to Victoria Bridge, which covers about 7½ acres, and which was purchased on Monday, the Land Association asked at the rate of 30s. per square yard, or in round figures about £55,000.

A work on "Ancient Sterling" is about to be published from the pen of Mr. John W. Small, F.S.A.Scot., architect, of Sterling, the author of many well-known books on Scottish architecture.

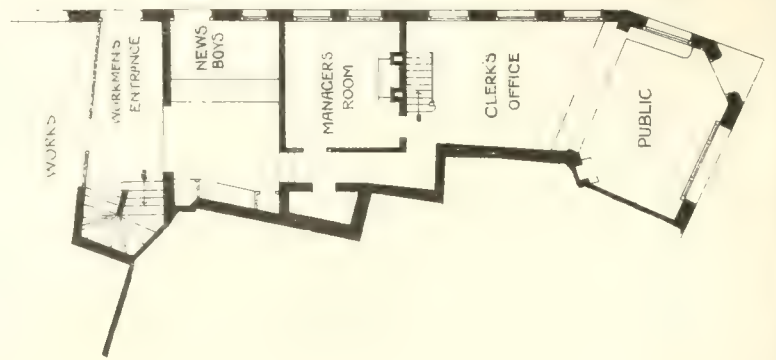
The new organ erected in St. John's Church, Wroxall, Isle of Wight, by Messrs. Hunter and Sons, of Clapham, at a cost of over £200, was publicly dedicated on the 7th inst.

The council of the University College, London, has appointed Mr. E. J. Garwood, M.A., F.G.S., of Trinity College, Cambridge, to the Chair of Geology and Mineralogy, vacant by the resignation of Professor Bonney.

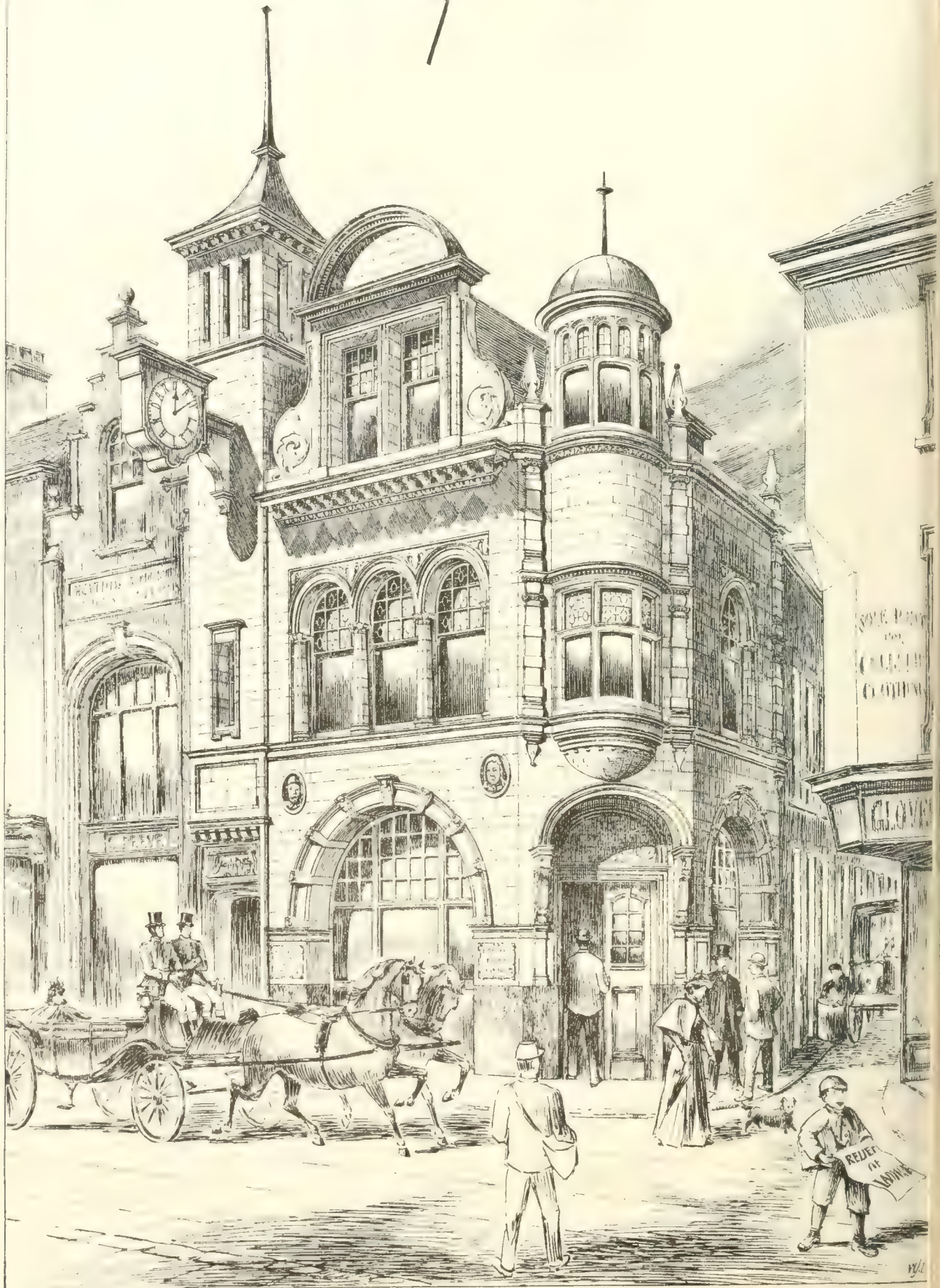
CRAIGIEVAR CASTLE ABERDEENSHIRE



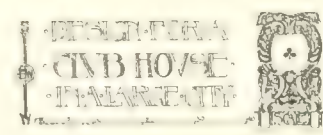
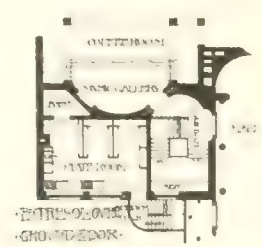




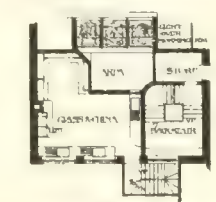
GROUND PLAN



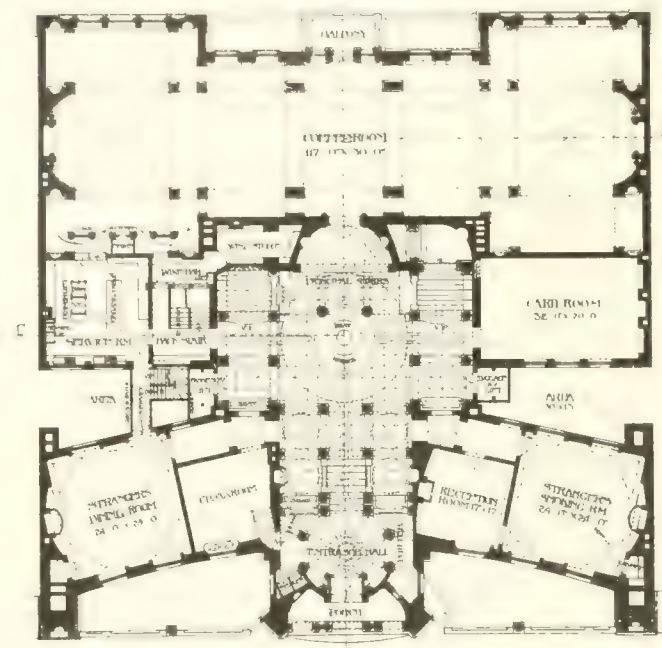




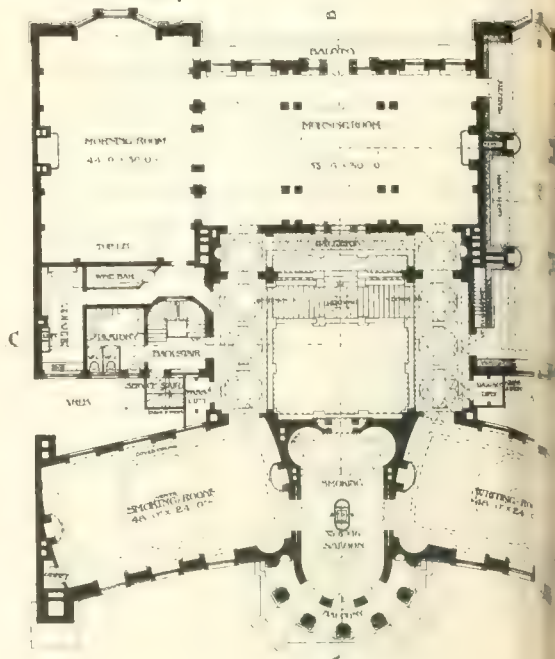
ENTRANCE OVER 1ST FLOOR



DESIGN FOR CLUB HOUSE PALACE IN A LAFAYETTE

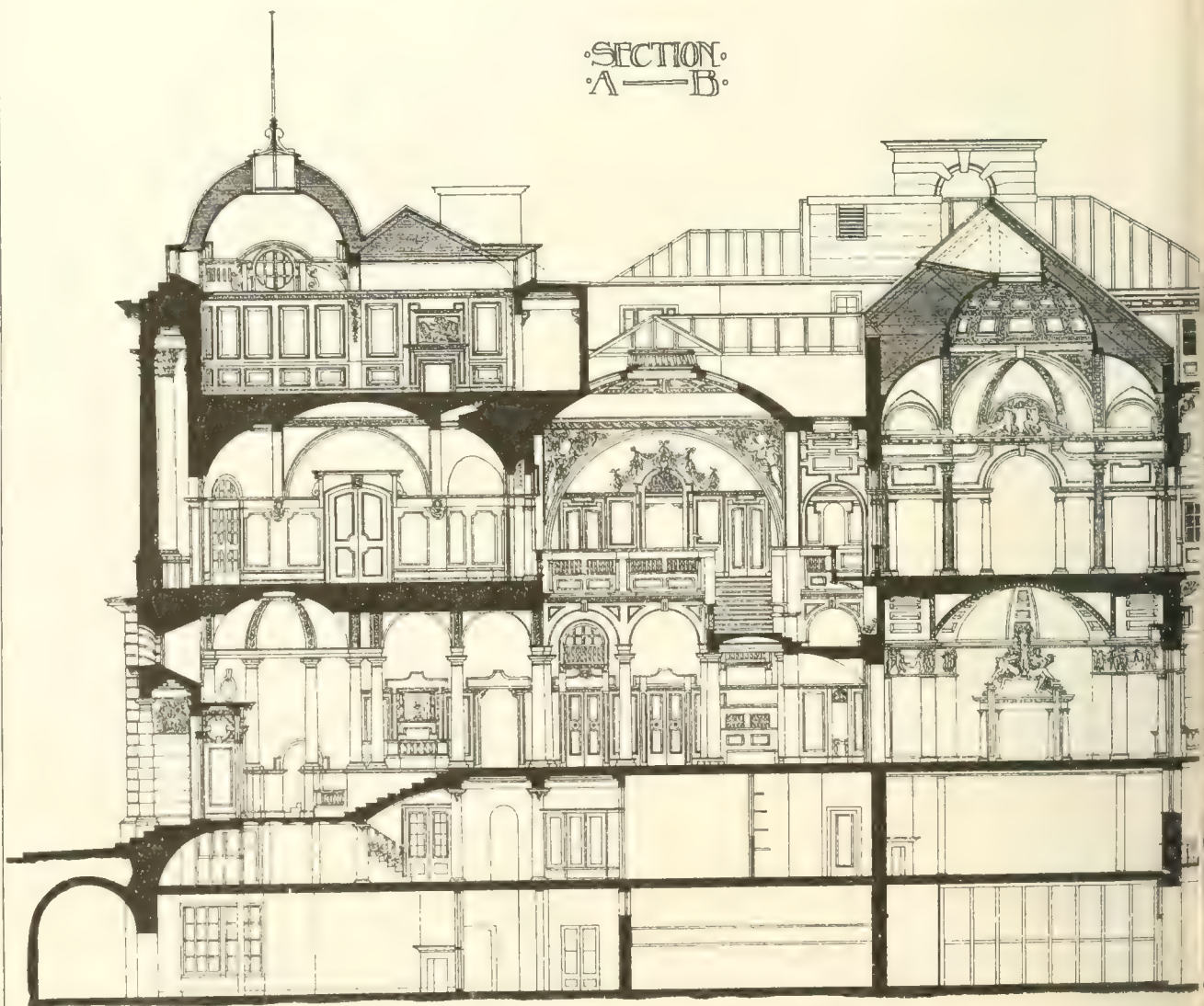


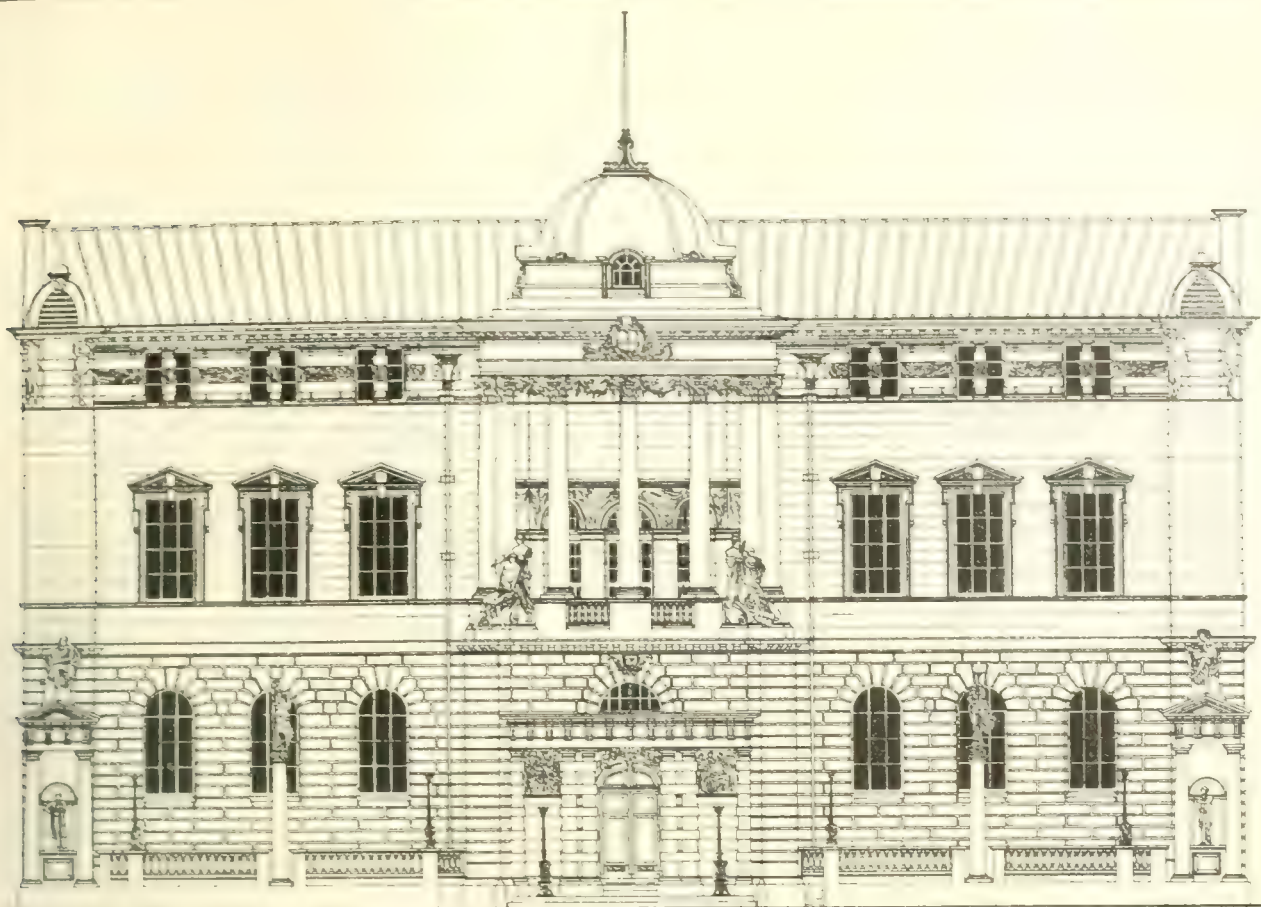
GROUND FLOOR PLAN



FIRST FLOOR PLAN

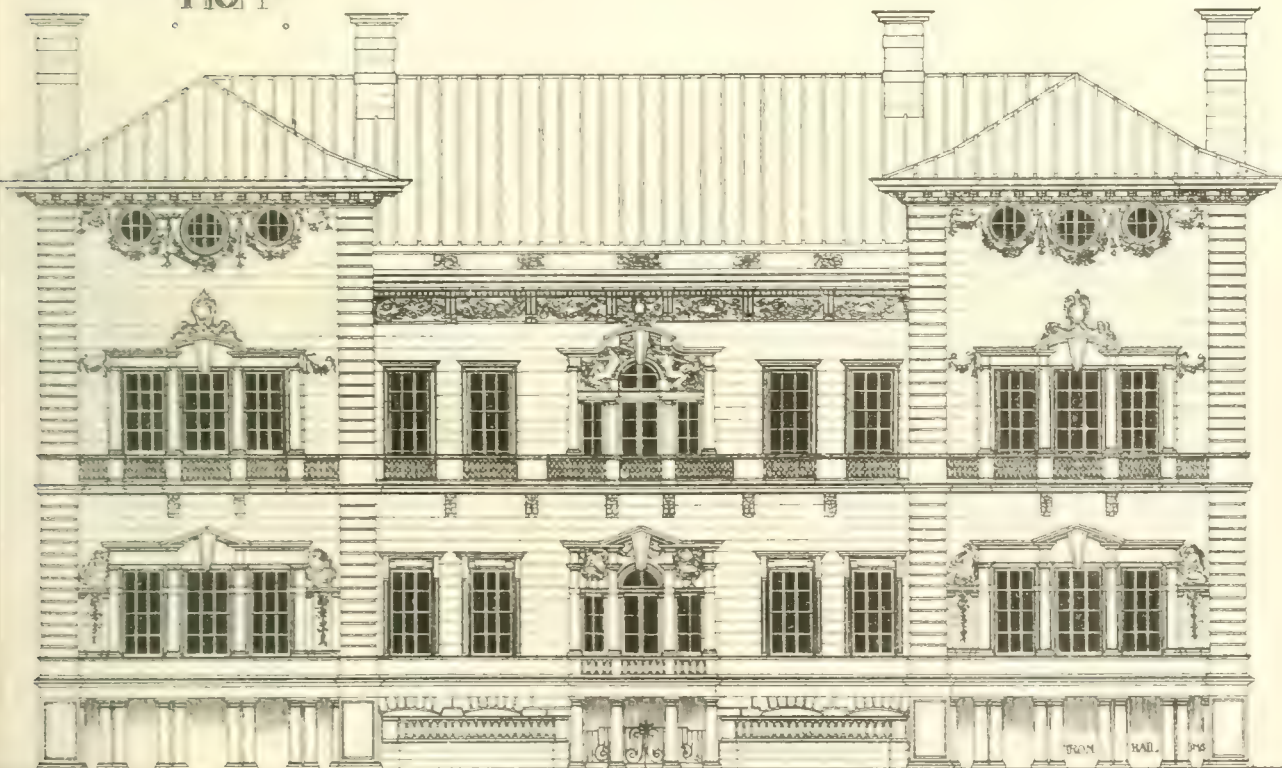
SECTION A-B





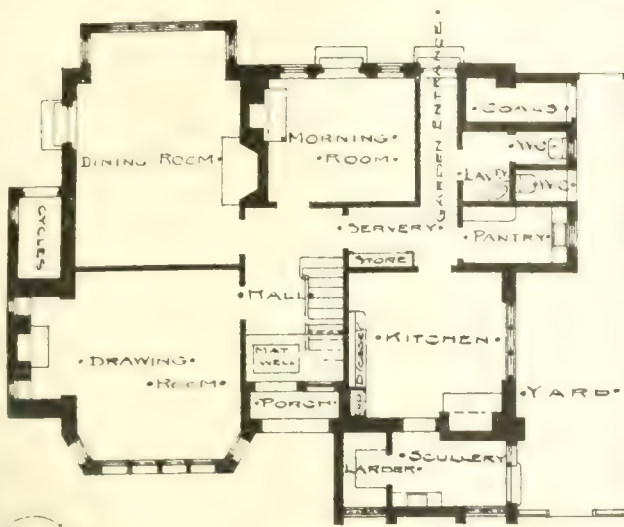
ENTRANCE FRONT

SOUTH ELEVATION

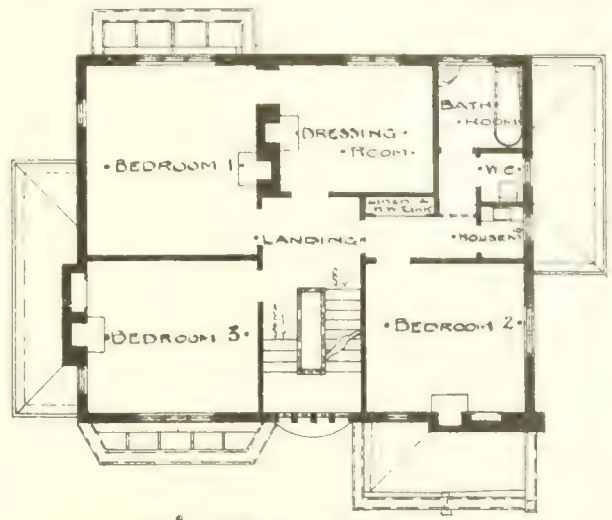


0 10 20 30 40 50 FT





Ground Plan

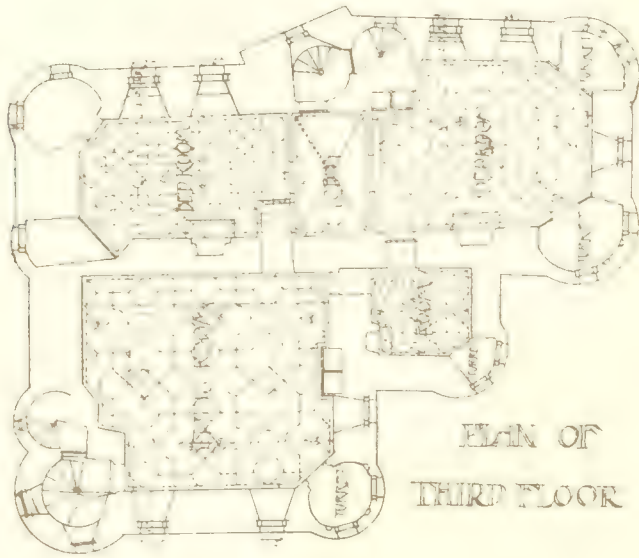


First Floor Plan

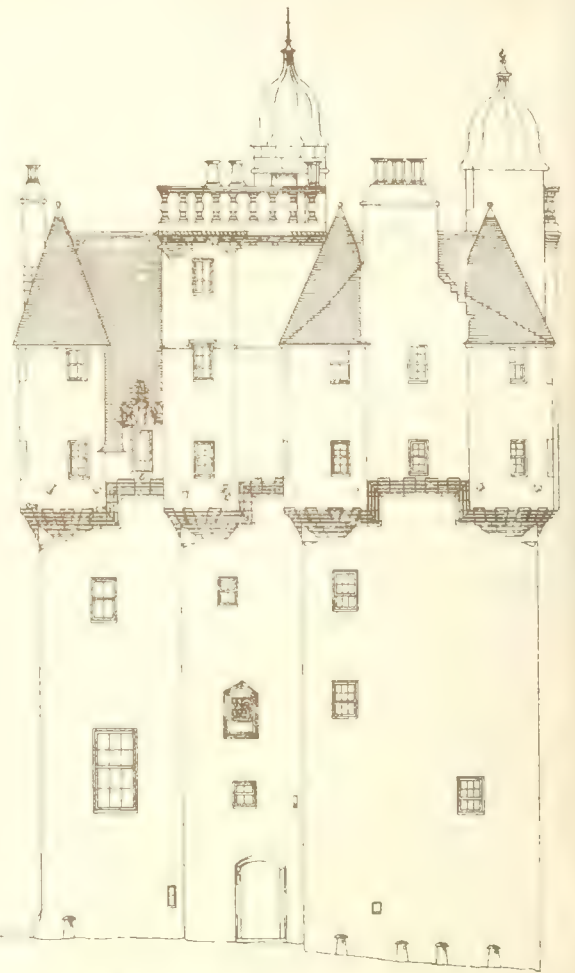




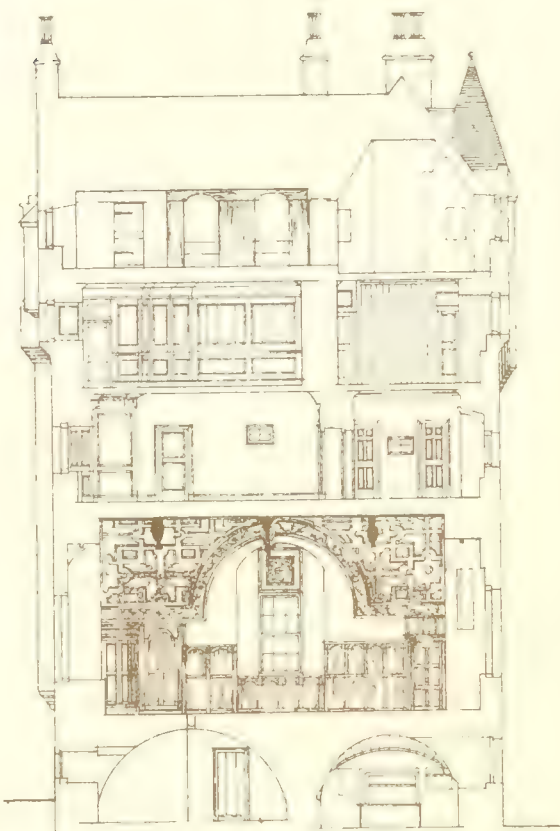




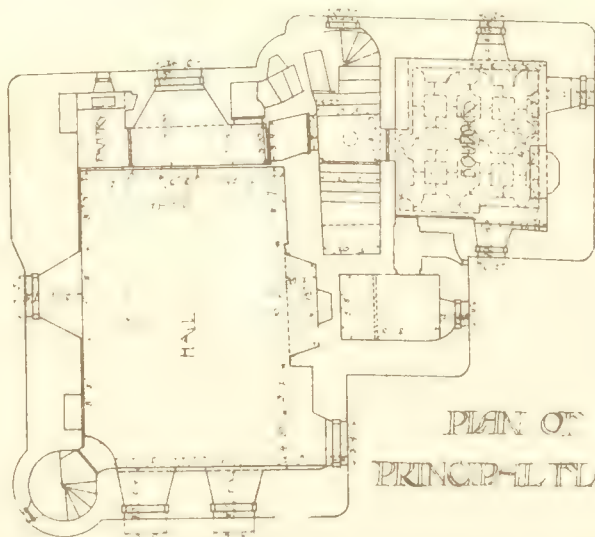
PLAN OF
THIRD FLOOR



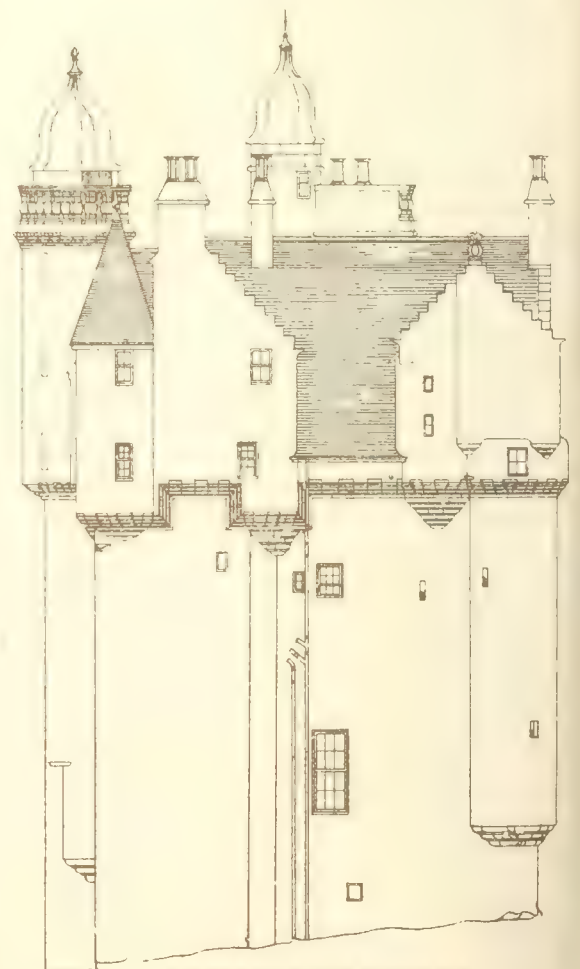
SOUTH ELEVATION



SECTION ON AD



PLAN OF
PRINCIPAL FLOOR



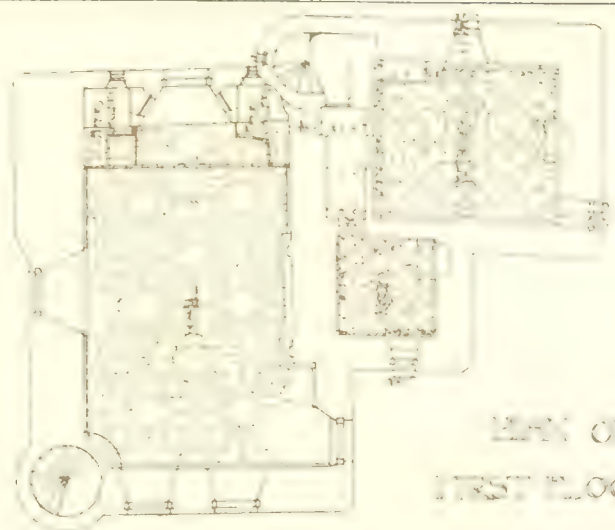
NORTH ELEVATION



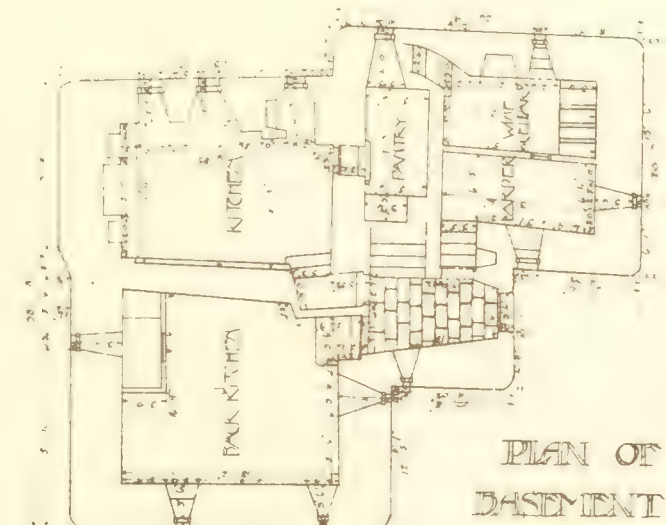
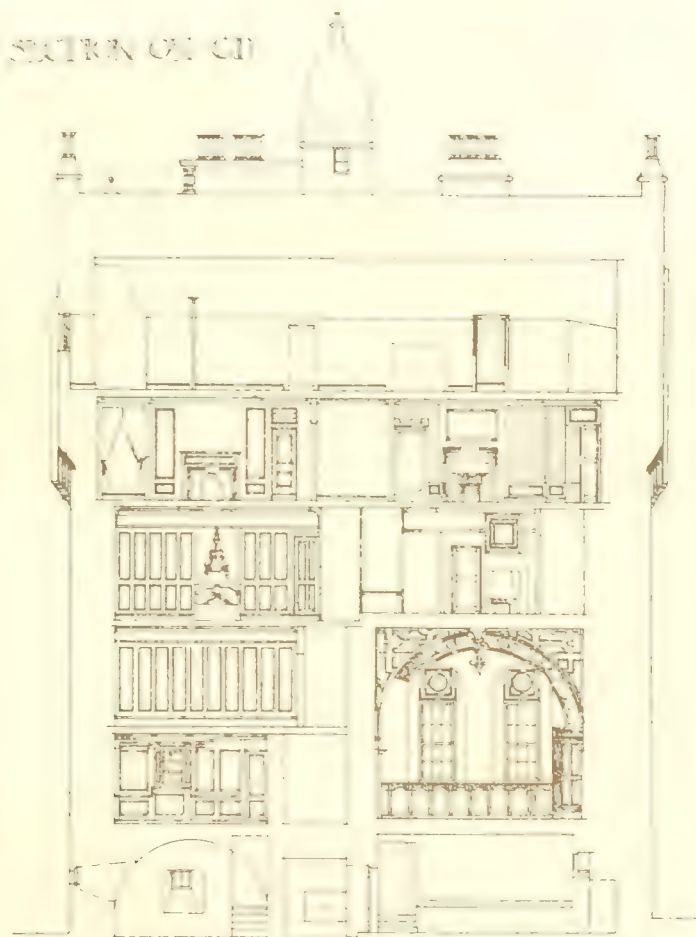
WEST ELEVATION



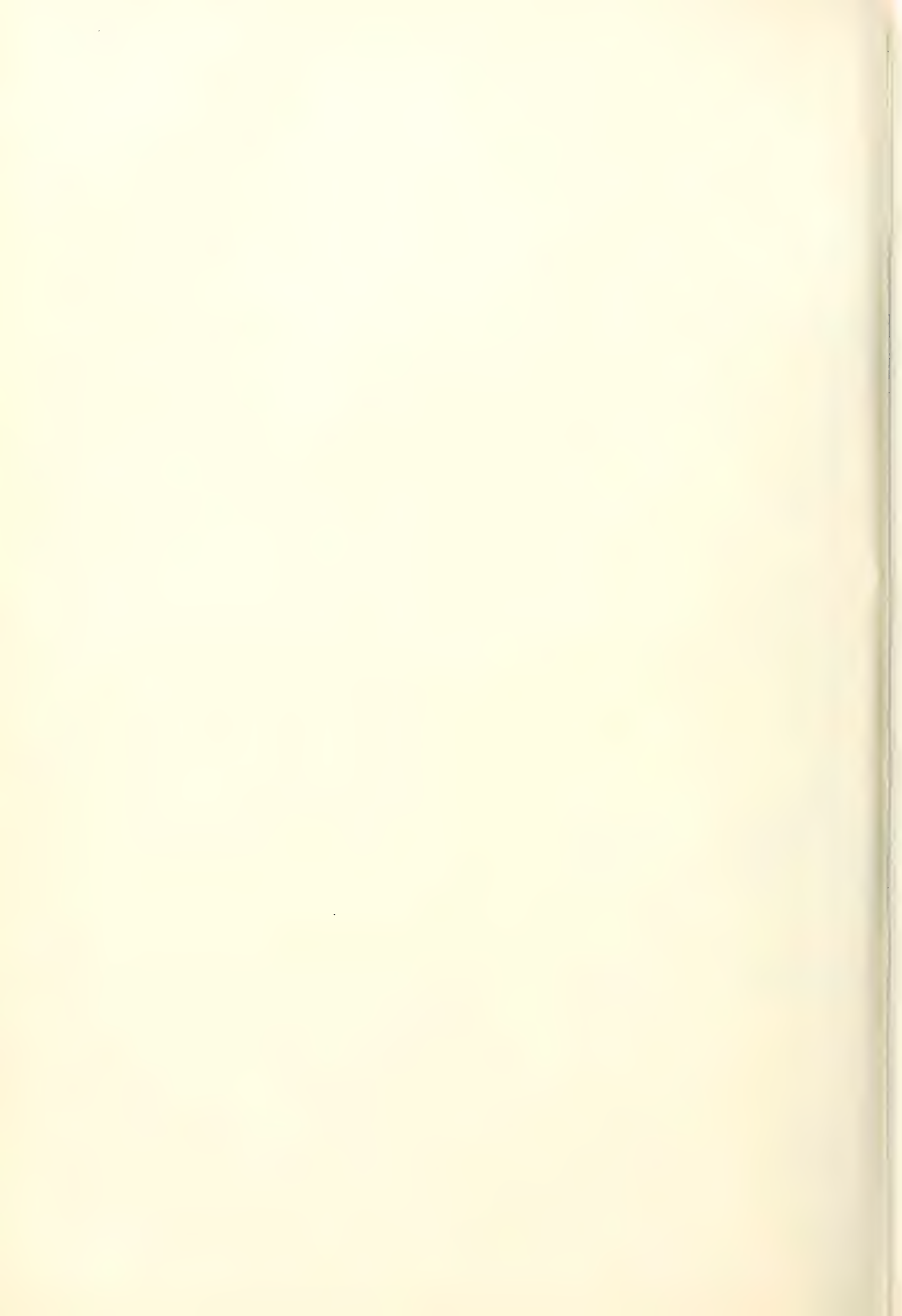
EAST ELEVATION



PLAN OF
FIRST FLOOR



PLAN OF
BASEMENT









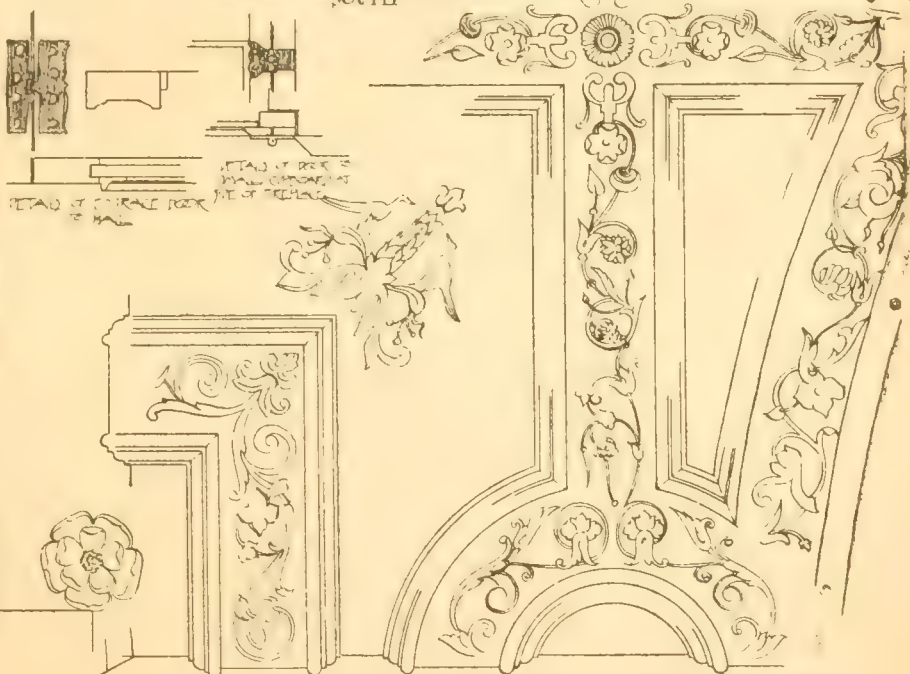
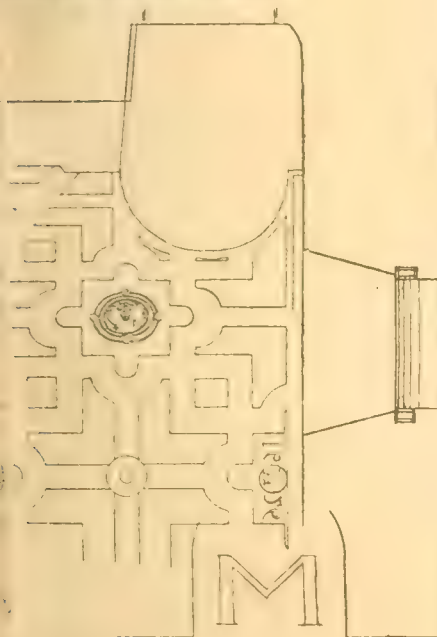
ACLVB HOUSE
ENTRANCE FRONT



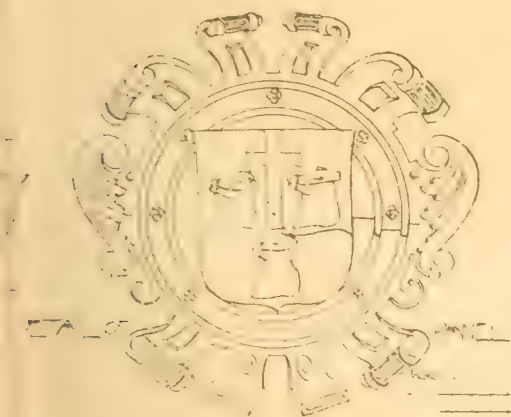
DETAILS OF BANQUETING HALL



SECTION THROUGH HALL LOOKING SOUTH



DETAIL OF DOOR TO SMALL CHAMBER
DETAIL OF DOOR TO HALL



DETAIL OF DOOR TO SMALL CHAMBER

DETAIL OF DOOR

Building Intelligence.

NORTHAMPTON.—A new Congregational school-chapel in Abington-avenue was dedicated on Friday week. It replaced one built in King-street a century and a quarter ago, and now closed and sold. The building, which has been erected from the designs of Messrs. Charles Dorman and Son, 51, Abington-street, is planned with the principal entrance from Abington-avenue, and a side entrance from Roe-road. On the ground floor is the schoolroom, 44ft. 6in. long by 28ft. wide, with classrooms at one side and an infants' schoolroom 28ft. 6in. long by 21ft. wide, with two classrooms 10ft. by 10ft. On the first floor is an assembly-hall 50ft. 6in. by 40ft. 6in., with vestries and retiring-rooms at the rear. This hall will for the present be used exclusively as a chapel. The pews from the old church in King-street are used to provide seating accommodation, and the pulpit and organ have also been taken from the old premises to the new, and have been erected in the chapel. In the basement is a kitchen, and also a store-room and heating chamber. The windows have opening casements for the admission of fresh air. The foul air is extracted through perforated panels in the ceilings, connected to a ventilating duct in the roof by means of an air-pump ventilator fixed on the ridge of the roof. The stairs are constructed of fireproof material. The total cost has been about £3,500. Messrs. Wingrove and Stanley, of Northampton, were the builders.

SEAFORTH.—A new Catholic church, dedicated to Our Lady Star of the Sea, was formally opened on Sunday. The church, which has seating accommodation for 600 people, is situated on a corner site in Church-road and Crescent-road. It consists of nave and aisles, apsidal chancel, two side chapels, baptistery ante-chapel, and three porches. Altogether, the building is 125ft. long and 55ft. wide, with three confessionals, priests' and boys' sacristies, and passage behind the chancel for convenient access from the sacristies. Above the ante-chapel and porches are a choir gallery and organ chamber, separated from the nave by a stone screen, with traceried balustrade. The nave arcade is supported by granite columns, with carved capitals. Above these, springing from carved corbels, granite shafts are carried up to the roof. The nave is lighted by traceried windows. The roof is carried up by hammer-beam principals, with traceried spandrels, &c. The chancel floor, of oak parquetry, is raised six steps above that of the nave. A lofty arch divides the chancel from the nave, and beyond it the chancel shows five traceried windows, three of which are filled with stained glass by Messrs. Hardman, of Birmingham. The church is lighted by electricity, and fitted with low-pressure hot-water pipes. Externally the church is built of Parbold stone, with Runcorn stone dressings. At the south-east corner of the church a tower and spire are at present completed only as high as the nave. Messrs. Sinnott, Sinnott, and Powell, of Liverpool, are the architects. The contracts were between £10,000 and £11,000. The greater portion of the carving has been executed by Mr. P. Homan, Liverpool.

During the past week a stained-glass window has been placed in the south side of St. Peter's Church, Humsbaugh, in memory of the late Mrs. Cruddas, of Haughton Castle. The parable of "The Ten Virgins" is the subject illustrated, the picture being inclosed in an architectural frame, with canopies above and bases below. The subject is depicted in two scenes. Mr. C. E. Kempe, of London, was the artist.

The water having been run out of George's Dock, Liverpool, workmen are now engaged in preliminary preparations for the continuation of Water-street to the pierhead. The roadway is to be constructed on concrete arches, the course to be followed having already been mapped out on the bottom of the dock, and the cost, as estimated by the city engineer, is to be about £14,300. It will, however, be some time before the work of construction can be commenced.

At the council meeting of the Society of Architects held on Thursday evening in last week at St. James's Hall, Piccadilly, the resignation of the office of vice-president was received with regret from Col. F. Seymour Leslie, R.E., of Exeter, who is leaving England, having been ordered on foreign service. The Council of the Society have elected Mr. Walter W. Thomas, of Liverpool, to fill the vacancy thus occasioned.

Our Office Table.

THE annual lectures on matters connected with building delivered under the auspices of the Worshipful Company of Carpenters have been arranged this year to take place on successive Thursday evenings at 8 p.m. as follows:—February 21, Mr. H. Heathcote Statham, F.R.I.B.A., on "Architecture at the Paris Exhibition"; February 28, Mr. H. C. Richards, K.C., M.P., on "Old London"; March 7, Mr. John Slater, B.A. Lond., F.R.I.B.A., on "Celebrated Ancient Buildings"; March 14, Mr. W. E. Riley, F.R.I.B.A., architect to the London County Council, on "Dwellings for the Working Classes"; March 21, Prof. T. Roger Smith, F.R.I.B.A., on "Westminster Abbey." The lectures will be illustrated by lantern photographs. Admission is free, by ticket, to be obtained from the clerk to the Company, Carpenters' Hall, London Wall.

THE National Society for Checking the Abuses of Public Advertising has addressed a letter to candidates in the forthcoming London County Council election, in which acknowledgment is made of the action of the Council in regard to sky-signs, flashlights, and tramway advertisements. Regret is, however, expressed that the Council has not followed the example of Edinburgh, Dover, Chesterfield, and many other municipalities in obtaining or applying for legislative power to control advertising display, with references not only to life and limb, but to the amenities of aspect. The letter formulates the following questions:—(1) Would you support the insertion in leases of the buildings on the improved areas of covenants restraining the exhibition on the external walls of signs and letters which would destroy the architectural effect? (2) Would you (with a view to making trips by the contemplated municipal steamers more attractive) approve of prohibiting the display on the river banks of unduly large placards and letters?

THE formulating of a scheme for providing Liverpool with a cathedral worthy of so vast a centre of population has just been advanced a stage further. It will be remembered that the Bishop of the diocese (Dr. Chavasse) recently brought together a body of well-known gentlemen resident in the diocese to consider matters, and eventually an executive committee was appointed to deal with such questions of site and, as far as possible, plans, with a request that they would report thereon to the larger body. The executive met on Monday at the town hall, Liverpool, when important points were further discussed. The site was practically decided upon, and efforts are being made to obtain the sanction of some prominent gentlemen associated with the city to open the subscription list—which will probably have to amount to several hundreds of thousands to carry out the scheme as desired—by a handsome donation. Pending this, it is stated that nothing will be made public; but it is hoped that early next month the committee will make their proposals known, and ask for the co-operation of citizens in carrying them to a successful issue.

"THE First Monastic Church at Furness" was the subject of an address given before the Lancashire Antiquarian Society last Friday evening by Mr. Harold Brakspear. The meeting was held at Chetham College, Manchester, the Rev. E. F. Lettis in the chair. Mr. Brakspear disclaimed any intention of entering into the history of monachism, but he reminded his audience that from the seventh to the tenth centuries the only regular order of monks in Western Europe were the followers of St. Benedict of Nursia. At the end of this period numberless disputes arose as to the true reading of the rule that he laid down. Abuses crept in, and great laxities were allowed to prevail, in order to check which various reforms were instituted in individual abbeys. Of the more than twenty orders of reformed Benedictines which arose in the next 400 years it was only necessary to consider the Cistercians and Savigniacs. He went on to show the changes which had taken place at Furness in or shortly after 1148, and described the features of the early type of Cistercian work in this country, illustrating his remarks with plans. He showed a parallel in regard to the structure of the church at Vaux de Cernay in the diocese of Paris. In replying on a short discussion, Mr. Brakspear mentioned that while in the 12th century the eastern ends of the church were square, in the

13th century they were again apsidal, as originally in Cistercian churches.

THE annual report of the Epping Forest Committee of the City Corporation states that the thinning operations—at one time the most pressing of the necessary works and improvements—had been gradually getting lighter year by year. During the past winter the following areas were very lightly thinned—viz., Epping Lower Forest, the southern end of Ambresbury banks, Theydon High Wood, two portions of Loughton Manor, and a portion of Bury Wood, Sewardstone. By such treatment the forest was, the committee believe, greatly improved in beauty. They had carefully inspected other parts of the forest requiring similar treatment during the present winter, and had instructed the superintendent accordingly. They had recently considered the suggestions made by experts five years ago that in some parts of the forest the monotonous stretches of hornbeam pollards which were so conspicuous a feature should be treated in groups, and in others should be thinned in a bolder manner to open up views of the surrounding country. Concurring in that opinion, they had extended several old openings on undulating portions in Loughton parish, with the gratifying result that many charming views had been obtained, formerly obscured by dense masses of stunted trees. The additions and alterations to Queen Elizabeth's Lodge had been completed at a cost of £1,008. The restorations had given great satisfaction, and the museum was now in course of rearrangement, not only in the banqueting-room, where it had existed for some years, but also in the renovated oak room on the first floor. The old tapestry was being cleaned and restored with very beneficial result. The expense of maintenance during the year had been £5,604, and this year the probable expenditure would be £5,500.

MEETINGS FOR THE ENSUING WEEK.

MONDAY.—Clerks of Works Association. 18th Annual Dinner, King's Hall, Holborn Restaurant. 6.30 p.m.

Royal Institute of British Architects. Address to Students by the President. William Emerson: "Criticism of Competitive Designs and Drawings," by J. Alfred Gatch, F.S.A. 8 p.m.

Society of Arts. "The Bearings of Geometry on the Chemistry of Fermentation." Cantor Lecture No. 2, by W. J. Pope. 8 p.m.

Northern Architectural Association. Annual Social Gathering, Newcastle. 7.30 p.m.

Liverpool Architectural Society. "Bricks and Brickwork," by Richard Holt.

Leeds and Yorkshire Architectural Society. "The Planning and Design of Churches," by H. C. Corlette, A.R.I.B.A. 8.30 p.m.

TUESDAY.—Society of Arts. "The Crisis in China: its Causes and Solution," by Joseph Walton, M.P. 4.30 p.m.

Institution of Civil Engineers. "The Nilgiri Mountain Railway," by W. J. Weightman. 8 p.m.

Architectural Association of Ireland. "Picturesque Dublin," by G. P. Sheridan. 8 p.m.

WEDNESDAY.—Society of Arts. "Railway Travelling: Past and Present," by Frederick McDermott. 8 p.m.

THURSDAY.—Society of Architects. "The Architecture of the Nineteenth Century," by G. A. T. Middleton, A.R.I.B.A., Member of Council, St. James's Hall, Piccadilly, S.W. 8 p.m.

Carpenters' Hall Free Lectures. "Architecture at the Paris Exhibition," by H. H. Statham, F.R.I.B.A. 8 p.m.

FRIDAY.—Birmingham Architectural Association. "Stonework," by Prof. Beresford Pite, F.R.I.B.A. 6.45 p.m.

Glasgow Architectural Craftsmen's Society. "The Practice of Chimney Building and Boiler Setting," by John G. Dunn. 8 p.m.

The Wath and District Joint Infectious Hospital is being warmed and ventilated by means of Shorland's patent Manchester stoves, with ornamental tiled sides and with descending smoke-flues, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

A meeting of the Northern Architectural Association was held on the 6th inst. at the rooms, 36, Northumberland-street, Newcastle. Mr. Ball, of Sunderland, presided. Mr. Robert A. Wood, B.S., M.E., of Manchester, read a paper on "Luxfer Prisms and Prismatic Lighting." He discussed the theory and application of prismatic lighting, illustrating his paper with the aid of lantern illustrations.

Intercommunication.

REPLIES.

[11677.]—**Stone for Window-Sills.**—Harry Hems makes a suggestion which lies outside the range of practical masonry in this country. The whole of several of the older Government buildings in Philadelphia and the door and window-sills of endless rows of red brick houses there, are of Metamorphic Silurian limestone quarried in Montgomery County, Pennsylvania. This limestone is the only "white marble" found in the State. Serpentine from Chester County, Pennsylvania, is a favourite building stone in Philadelphia. It has been used in the new University Buildings, the Academy of Sciences, and over twenty new churches in that city. The origin of this stone is doubtful; but the balance of opinion is in favour of its having been erupted through Archæan schists. Another important building stone used in Philadelphia is a highly-crystalline dolomite, called "white marble." This is quarried at Lee, Massachusetts. Granite is also used. White marble is not a weather stone in the British Isles, for in a few years it loses its polish, and in fifty it is in a state of rapid decay. All the American marbles hitherto worked are so coarse in grain that French, Italian, and Belgian marbles are imported for fine work. —W. E. M.

[11677.]—**Stone for Window-Sills.**—Harry Hems asks, Why not use white marble for window-sills? I should be most pleased to do so but for the prohibitive expense. I practise in London, and find that whilst I can obtain marble mantelpieces of the plainest description made of thin slab marble, yet if I want any special work of white marble 3in. or 4in. thick, I have to pay a most exorbitant price for it. Perhaps Mr. Hems will kindly favour us with information as to kinds and prices for window-sills and such work? His contributions to your pages are always interesting and welcome. In London, plain thin marble mantelpieces are so cheap that they are made by the garret-workers of Bethnal-green, and hawked about on barrows. In priced quantities of builders they come out much cheaper than Robin Hood or Portland. I am not quite certain how white marble would stand the effect of the acid impurities gathered by rain in London, followed by the destructive action of frost and the wearing action of dust-laden winds, on such a hard-working member of a building as is a window-sill. I find it difficult to get good sandstones to stand, and in one building erected (not by me) within the last thirty years, have had to take out nearly 300 rotten stone sills, and replace them with an artificial stone of Portland cement and granite, as being most trustworthy. —A. H.

[11684.]—**Bonding of Stone Columns to Brick-work.**—"Young Architect" does not say if the columns are to be bonded to a stone or brick wall, though the closing sentence of his inquiry would suggest the latter. To build one quarter of a circular shaft into a brick wall is not to bond it to that wall. The great danger to be guarded against in building stone columns against brickwork is the shrinkage of the latter in vertical height owing to the great number of joints in the work, the columns being in this way left to carry all the weight of the superincumbent work. The method to adopt in bonding a stone column to brickwork will depend on whether the column is in one length or several lengths. If in one length it can be held in position by dovelling it into the base and cap, both of which can have bonds tailing into the wall, and if in several lengths the central one might have a bond worked in which would tail into wall behind the brick facing, the top and bottom lengths being dovelled into the base and cap as suggested for the single stone column. "Young Architect" should rather ascertain how stonework ought to be connected with stonework than how it is connected, for many things in building are not done as they should be. —W. E. M.

CHIPS.

The president and twenty-one members of the Royal Academy, including Professor George Aitchison, have petitioned the London County Council to oppose the proposed extension of the Charing Cross, Euston, and Hampstead Railway to Hampstead Heath.

The King of the Hellenes received, at Marlborough House on Monday, a deputation from the Byron Society, who submitted for His Majesty's inspection designs by Mr. E. Frampton, A.R.A., of a three-light window, to be placed by the members of the society to the memory of Mr. and Mrs. Gladstone in the east-end of the chancel of the new district church in Haverdon parish, by permission of the rector, the Rev. Stephen Gladstone. The centre light represents the Crucifixion, and the side lights represent the Blessed Virgin and St. John in adoration.

Messrs. Christie, Manson, and Woods began on Saturday the four days' sale of the collection of pictures and drawings and the remaining works of the late Mr. E. M. Wimperis, vice-president of the Royal Institute of Painters in Water Colours. The first day's sale of 169 lots (of which 134 lots were drawings or pictures by the deceased artist) realised a total of £3,322.

The death is announced from pneumonia of Mr. J. H. Garrett, of Longton, Staffs, who for a quarter of a century was the surveyor for the Florence estate of the Duke of Sutherland, a position which he resigned two years ago. He rendered good service to the borough by the laying out of the Queen's Park, the ground for which was a gift to the town by the late Duke of Sutherland. He had also given assistance to the town in the Stone-road improvements, and generally in the Florence district. Mr. Garrett was 52 years of age.

Trade News.

WAGES MOVEMENTS.

GLASGOW.—A settlement of the joiners' dispute in Glasgow seems imminent. Over 90 men started work on Monday at the old rate of wages of 10d. per hour, at the City Sawmills, and a further number of 50 men resumed employment on Tuesday. This action on the part of the City Sawmills in withdrawing the lock-out notice has given great satisfaction to the men's executive, who consider it an indication of an early settlement in their favour. An Overnewton firm has also withdrawn the notice, and in all, about 250 men started work on Monday. Several of the employers continue to hold out against the 10d. per hour, and 15 men, brought from Manchester by the masters, started work at Polmadie at the beginning of the week.

NEWCASTLE-ON-TYNE.—It was understood that the dispute between the bricklayers of Newcastle and Gateshead and their employers, which led to the lock-out in the north-east of England, was to be settled by arbitration, each side electing an arbitrator. The employers chose their representative, but the men failed to get one. Under the circumstances the parties concerned have agreed to ask the Board of Trade to appoint an arbitrator.

SUNDERLAND.—At a meeting of the Sunderland and District Building Trades Managers, Foremen, and Clerks' Association, held on Saturday evening last, the rules and regulations of the Managers, Foremen, and Clerks' Union were passed, and copies of the same have been sent throughout the districts of the Northern Counties Federation.

TEES SIDE JOINERS.—The Tees-side and Hartlepool joiners have sent a demand to the secretary of the Master Builders' Association (Mr. W. C. Cressor, of Stockton) for an advance of wages, to date from the 13th of May next, of one penny, or from 9d. to 10d. per hour. Alterations of rules with regard to permitting men unable to commence work at half-past six to start at seven, and seeking an allowance for lodgings when working outside of the town, are also included in the demand.

Colonel C. H. Luard, R.E., held a Local Government Board inquiry at the town-hall, Cromer, yesterday (Thursday), into the application of the Urban District Council for sanction to borrow £500 for works of surface drainage.

At their meeting on Tuesday next the London County Council will be asked to pass estimates for £623,500 for the reconstruction for electric traction of the Council's tramways between (a) Westminster Bridge-road and Upper Tooting-road; (b) Kennington Park-road (at its junction with Kennington-road) and the terminus at Blackfriars-road; and (c) St. George's-circus and the terminus in Waterloo-road, of sums not exceeding these amounts respectively in respect of (1) buildings and railway sidings, and (2) lines, machinery, generating plant, rolling-stock, and electrical equipment.

The candidates for the new London County Council will find an excellent cry in the proposal of the water companies to make houseowners repipe their dwellings on the meter system. To repipe a house of only £45 rental would, it is stated, cost £15.

The municipal authorities at Leicester have formally opened a large extension of the lunatic asylum, which has been enlarged at a cost of over £100,000.

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The most extensive Stock of every kind of
Wood in Planks and Boards, dry and fit for
immediate use.

LATEST PRICES.

IRON, &c.

	Per ton.	Per ton.
Roller-Iron Joists, Belgian.....	£8 0 0 to	£8 10 0
Roller-Iron Joists, English.....	9 0 0 "	10 0 0
Wrought-Iron Girder Plates.....	9 0 0 "	9 15 0
Bar Iron, Road Staffs.....	8 7 6 "	9 7 6
Do., Lowmoor, Flat, Round, or Square.....	20 0 0 "	20 0 0
Do., Welsh.....	5 15 0 "	5 17 6
Boiler Plates, Iron—		
South Staffs.....	7 17 6 "	8 5 0
Best Saeedshill.....	13 0 0 "	13 10 0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £4 15s.

Builders' Hoop Iron, galvanised, £15 10s. 9d. per ton.

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24.
8ft. to 8ft. long, inclusive gauge.....	£12 5 0	£12 10 0
Best ditto.....	12 15 0	13 0 0
Cast-Iron Columns.....	£9 0 0 to	£9 10 0
Cast-Iron Stanchions.....	9 0 0 "	9 10 0
Roller-Iron Fencing Wire.....	11 15 0 "	12 15 0
Roller-Iron Fencing Wire.....	11 15 0 "	12 15 0
Do., Galvanised.....	13 0 0 "	14 0 0
Cast-Iron Sash Weights.....	7 5 0 "	8 0 0
Cut Clasp Nails, 3in. to 6in.....	12 0 0 "	13 0 0
Cut Floor Brads.....	11 15 0 "	12 15 0

Wire Nails (Points de Paris)—

0 to 7 8 9 10 11 12 13 14 15 B.W.G.

11- 11 6 11 9 12 8 12 9 13 6 14 3 15 16- per cwt.

Cast-Iron Socket Pipes—

3in. diameter.....	£6 17 6 to	£7 5 0
4in. to 6in.....	6 15 0 "	7 0 0
7in. to 24in. (all sizes).....	6 15 0 "	7 0 0

[Coated with composition, 2s. 6d. per ton extra; turned and bored joints, 6s. per ton extra.]

Pig Iron—

Cold Blast, Lilleshall..... 105s. to 110s.

Hot Blast, ditto..... 57s. 6d. to 62s. 6d.

Wrought-Iron Tubes and Fittings—Discount off Standard

Lists f.o.b.—

Gas-Tubes..... 80 p.c.

Water-Tubes..... 55 "

Steam-Tubes..... 50 "

Galvanised Gas-Tubes..... 47 1/2 "

Galvanised Water-Tubes..... 45 "

Galvanised Steam-Tubes..... 40 "

10cwt. casks. 6cwt. casks.

Per ton. Per ton.

Zinc, English (London mill)..... £25 0 0 to £25 10 0

Do., Vieille Montagne..... 26 0 0 " 26 15 0

Sheet Lead, 3lb. per sq. ft. super..... 21 0 0 " 22 0 0

Pig Lead, in 1cwt. pigs..... 20 0 0 " 21 0 0

Lead Shot in 28lb. bags..... 23 0 0 " 24 0 0

Copper Sheets, sheathing and rods..... 89 0 0 " 90 0 0

Copper, British Cake and Ingots..... 75 0 0 " 75 10 0

Tin, Straits..... 145 0 0 " 145 0 0

Do., English Ingots..... 150 0 0 " 150 0 0

Spelter, Silesian..... 17 15 0 " 18 0 0

TIMBER.

Teak, Burmah..... per load £10 10 0 to £16 5 0

" Bangkok..... " 10 0 0 " 15 5 0

Quebec Pine, yellow..... " 4 5 0 " 5 0 0

" Oak..... " 3 5 0 " 1 12 6

" Birch..... " 2 15 0 " 3 15 0

" Elm..... " 4 17 6 " 5 1 0

" Ash..... " 3 5 0 " 3 15 0

Dantaic and Memel Oak..... " 3 0 0 " 4 11 0

Fir..... " 3 0 0 " 4 0 0

Wainscot, Riga p. log..... " 2 0 0 " 3 5 0

Lath, Dantaic, p.f. log..... " 4 0 0 " 5 15 0

St. Petersburg..... " 4 0 0 " 6 10 0

Greenheart..... " 7 15 0 " 8 0 0

Box..... " 7 0 0 " 15 0 0

Sequoia, U.S.A., per cube foot..... 0 1 9 " 0 2 0

Mahogany, Cuba, per super foot..... 0 0 6 " 0 0 8

lin. thick..... " 0 0 6 " 0 0 7 1/2

" Honduras..... " 0 0 4 " 0 0 4 1/2

" Mexican..... " 0 0 3 1/2 " 0 0 5 1/2

" African..... " 0 0 3 " 0 0 3 1/2

Cedar, Cuba..... " 0 0 3 " 0 0 3 1/2

" Honduras..... " 0 0 3 1/2 " 0 0 3 1/2

Satinwood..... " 0 0 10 0 " 0 1 9

Walnut, Italian (logs)..... " 0 0 8 " 0 0 7 1/2

" American (logs)..... " 0 2 3 " 0 4 6

Deals, per St. Petersburg Standard, 120-12ft. by 1 1/2in.
by 1 1/2in.:

Quebec, Pine, 1st..... £25 0 0 to £30 0 0

" 2nd..... 17 10 0 " 21 0 0

" 3rd..... 12 0 0 " 14 0 0

Canada Spruce, 1st..... 11 10 0 " 14 10 0

" 2nd and 3rd..... 9 10 0 " 10 0 0

New Brunswick..... 8 10 0 " 10 10 0

Riga..... 8 10 0 " 10 0 0

St. Petersburg..... 11 0 0 " 13 0 0

Swedish..... 12 0 0 " 21 0 0

Finland..... 11 10 0 " 13 10 0

White Sea..... 13 0 0 " 22 10 0

Battens, all sorts..... 5 0 0 " 12 0 0

Flooring Boards, per square of 1in.:

1st prepared..... £0 12 6 " £0 19 0

2nd ditto..... 0 11 6 " 0 14 9

Other qualities..... 0 7 0 " 0 13 6

Staves, per standard M:—

U.S. ditto..... £37 10 0 " £45 0 0

Memel, cr. pipe..... 220 0 0 " 230 0 0

Memel, brack..... 190 0 0 " 200 0 0

OILS.

Linseed..... per tun £22 0 0 to £23 10 0

Rapeseed, English pale..... " 23 0 0 " 25 5 0

Do., brown..... " 23 15 0 " 27 5 0

Cottonseed, refined..... " 21 10 0 " 22 0 0

Olive, Spanish..... " 35 0 0 " 68 0 0

Seal, pale..... " 24 15 0 " 26 0 0

Cocoanut, Cochin..... " 25 15 0 " 26 0 0

Do., Ceylon..... " 25 15 0 " 26 0 0

Palm, Lagos..... " 28 0 0 " 28 5 0

Oleins..... " 17 5 0 " 19 5 0

Lubricating U.S..... per gal. 0 7 0 " 0 8 0

Petroleum, refined..... " 0 0 6 1/2 " 0 0 6 3/4

Tar, Stockholm..... per barrel 1 8 0 " 1 8 0

Do., Archangel..... " 0 19 6 " 1 0 0

Turpentine, American..... per tun 37 0 0 " 37 5 0

LIST OF COMPETITIONS OPEN.

Nottingham—Sewerage Scheme for the Parishes of Colwick-Goding and Burton-Joyce	C. J. Spencer, Clerk, Public Offices, Basford, Nottingham	Mar. 25
Dudley—Six Villas and Six Cottages	G. W. Waring, Mining Engineer, 42, Wellington-street, Dudley	—

LIST OF TENDERS OPEN.

BUILDINGS.

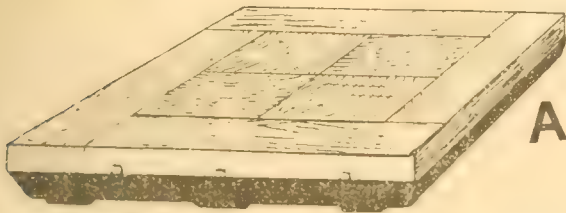
Annfield Plain—Shops, &c.	Industrial Co-operative Society	Geo. Thos. Wilson, Architect, 121, Durham-road, Blackhill	Feb. 16
Kewick—Steam Laundry	W. Neal	Mrs. Scott, The Forge, Kewick	16
Bridlington—Alterations at 7, Queen's-terrace	John Wilman	Samuel Dyer, Architect, Bridlington	16
Tonny-fall—Gallery, Bible-Christian Chapel	Lighting Committee	C. Morse, High-street, Tonny-fall	16
Whitehaven—Additions to St. Nicholas' School	Guardians	J. S. Moffat, Architect, 53, Church-street, Whitehaven	16
Llandaff—Tennis Pavilion at Howell's County School	Highways Committee	Geo. E. Halliday, F.R.I.B.A., Architect, 14, High-street, Cardiff	16
Kirkby Lonsdale—Church-House, &c.	Suffolk Agricultural Association	John Kassel, M.S.A., Architect, Kirkby Lonsdale	16
Hampthwaite—Church Restoration	Wm. Denton	C. Hodgson Fowler, F.S.A., Architect, The College, Durham	16
Dunceath—Farm Offices, Banks of Finneray	Lighting Committee	Davidson and Garden, 12, Dee-street, Aberdeen	16
Wolverhampton—Office Extension	Shoreditch Borough Council	W. Edwards, Architect, 25, Durlington-street, Wolverhampton	18
Colchester—Alterations to Workhouse Kitchen	School Board	C. E. Butcher, Architect, Queen-street, Colchester	18
Kington—Infirmary at Union Workhouse	Pembrokeshire County Council	C. S. Delfosse, Architect, Duke-street, Kington, Hereford-shire	18
Eastbourne—Repairing Cottages	Guardians	E. M. Gloyne, A.M.I.C.E., Boro' Engineer, Town Hall, Eastbourne	18
Beccles—Shedding, &c.	Kingston-upon-Hull School Board	Robert Bond, Secretary, Old Bank House, Ipswich	18
Wrexham—Fourteen Houses, Hampden-st. and Victoria-rd.	School Board	E. Hammer, 37, Penybryn, Wrexham	18
Alnmouth—Alterations at River Bank House	Gas Commissioners	M. Temple Wilson, Architect, Alnwick	18
Canterbury—Extension of Electricity Works	Hendon Union Guardians	The City Surveyor's Office, Tudor Chambers, High-st., Canterbury	18
Reading—Millhouse, &c.	Co-operative Society	Sussex Portland Cement Co., Ltd., Newhaven	18
Hoxton, N.—Alterations to Roof of Public Library, Pitfield-st.	Guardians	J. Rush Dixon, A.M.I.C.E., Boro' Eng., Town Hall, Old-st., E.C.	19
Bradford—Additions at Lidget Green School	Lancashire Asylums Board	Wilson Bailey, Architect, 9, Market-street, Bradford	19
Haverfordwest—Additions to Shire Hall	Town Council	A. H. Thomas, Assistant County Sur., Shire Hall, Haverfordwest	19
Todmorden—Board-Room and Offices, Hall-street	Rathmines and Rathgar U.D.C. School Board	Jesse Horsfall, F.R.I.B.A., Burnley-road, Todmorden	19
Hull—School Buildings, Thoresby-street	John Jessop	Brodrick, Lowther, and Walker, Architects, Lowgate, Hull	19
Stowlangtoft—Two Pairs Brick Cottages	Halifax Industrial Society	J. Birmingham, Estate Office, Stowlangtoft	20
Lerwick—Public School	Zion Sunday School Trustees	R. D. Ganson, Clerk, School Board Office, Lerwick	20
Huddersfield—Two Houses, Somerset-road, Moldgreen	James M'Mahon	J. Berry, Architect, 9, Queen-street, Huddersfield	20
Dundee—Concrete Floors	Mynyddislwyn School Board	Sir Thomas Thornton, Clerk, Dundee	20
Six Bells, Mon.—Baptist Chapel	R. Howell	The Rev. B. Davies, 9, Rosebery-street, Abertillery	20
Edgware, Middlesex—Probationary Wards at Schools	Town Council	J. Hudson, A.R.I.B.A., 23, York-place, Baker-street, W.	20
Platt Bridge—Wesleyan Church	Council	John Wills, F.S.Sc., Architect, Victoria Chambers, Darby	20
Elland—Dyeworks, &c.	Derwent Valley Water Board	Edward C. Brooke, Architect, 6, Huddersfield-road, Brighouse	20
Shipton—Stores, Hellfield	Yorkshire Banking Co., Ltd.	James Hartley, Architect, Skipton	20
Dewbury—Shed	Whitley and Monkseaton U.D.C.	Holton and Ex., Architects, Corporation-street, Dewsbury	20
Manchester—Fire-Escape Staircase at Workhouse	Guardians	A. J. Murgatroyd, 23, Strut-street, Manchester	20
Blairgowrie—St. Andrew's United Free Church	Swindon and Highworth Guardians	D. and J. R. M'Millan, Architects, 211, Union-street, Aberdeen	20
Rainhill, Lancs.—Pigeonries at Asylum Farm	School Board	Jas. Gornall, Clerk, Rainhill, Lancs.	21
Halifax—Circular Brick Chimney at Dapper Mills	Bernard M'Elhinny	W. H. D. Horsfall, Architect, Tower Chambers, Halifax	21
Devonport—Alterations to Mortuary	London County Council	The Borough Surveyor, 31, Ker-street, Devonport	21
Bridgend—Bailiff's Cottage, Parc Gwylt Asylum	Isle of Thanet Union Guardians	T. T. Lewis, Clerk to Visitors, Bridgend	21
Rathmines—Dwellings	Derwent Valley Water Board	F. J. Hicks, Architect, 23, South Frederick-street, Dublin	21
Balmedie—Additions to Public School	Yorkshire Banking Co., Ltd.	Brown and Watt, Architects, Aberdeen	21
Huddersfield—House, Spinkfield-road	Whitley and Monkseaton U.D.C.	J. B. Abbey and Son, Architects, 31A, New-street, Huddersfield	21
Workington—Additions to Furniture Warehouse	Parochial Charities Trustees	W. G. Scott and Co., Architects, Victoria Buildings, Workington	22
Elland—Four Through Houses, Gordon-street	Urban District Council	Richard Horsfall and Son, Architects, 22A, Commercial-street, Halifax	22
New Wortley—Classrooms, &c.	Trevethin School Board	H. Bannister, Secretary, Hawthorne-ter., Half-lane, New Wortley	22
Armagh—Premises	Urban District Council	H. C. Parkinson, Architect, 11, College-street, Armagh	22
Clayton—Malting Premises	Hon. Douglas A. Tollemache	Sam. Spencer, Architect, 314, Great Horton-road, Bradford	22
Abercrombie—Class-room, &c.	Urban District Council	R. L. Roberts, Architect, Abercrombie	22
Walker—Bowl Pavilion in Park	Great Western Railway Co.	T. T. Laycock, Surveyor, Mechanics' Institute, Church-st., Walker	23
Broadstairs—Pair of Villas, Queen's-road	Electrical Committee	J. Jarman, Elum Crescent-road, Ramsgate	23
Aberdeen—Octagonal Chimney Stalk (250ft.), Dee Village	St. Giles' Guardians	Alex. Smith, Engineer, Corporation Gasworks, Aberdeen	23
Wakefield—Boiler-House at Baths	School Board	The City Surveyor, Town Hall, Wakefield	23
Bradford—Wesleyan Chapel, Westgate Hill	John Harrison	Walker and Collinson, Architects, Swan Arcade, Bradford	25
Cambarne—Residence	Ernest Carr	Sampson Hill, Architect, Green Lane, Redruth	25
Stratton St. Margaret—Infirmary, &c.	Harding, Richardson, Rhodes, & Co.	R. J. Beswick, M.S.A., Architect, 35, Regent-street, Swindon	25
Hove—Small Alterations at Town Hall	E. A. Baker	H. H. Scott, Borough Surveyor, Town Hall, Hove	25
Bristol—Domestic Subjects Centre at Mina-road Schools	Stepney Union Guardians	W. P. Saunders, Architect, Rupert Chambers, Quay-street, Bristol	25
Omagh—Business Premises	Arthur W. Midgley	M. Sellers, C.E., Architect, Omagh	25
Raynham—Baptist Church, Kay-street	Sir Christopher Furness, M.P.	J. H. Spencer, F.G.S., Architect, Bury-road, Raynham	25
London, N.W.—Fire-Brigade Station, Euston-road	—	The Archt.'s Dept., F.B. Branch, 3, Warwick-st., Charing Cross, S.W.	26
Merthyr Tydfil—Rebuilding Bird-in-Hand Inn, High-street	—	C. M. Davies, Architect, 112, High-street, Merthyr	26
London, W.C.—Three Blocks Workmen's Dwellings, Drury-lane	—	The Architect's Department, 18, Pall Mall East, S.W.	26
Minster—Laundry Buildings at Workhouse	—	Leonard Grant, Architect, High-street, Sittingbourne	27
Barnford—Offices	—	Edward Sandeman, Engineer, Bamford, Sheffield	27
Wrexham—County School Buildings	—	J. H. Phillips, Architect, Olive Chambers, Windsor-place, Cardiff	28
Middlesbrough—Bank, Exchange-place	—	Bedford and Kitson, Architects, Greek-street Chambers, Leeds	28
Whitley—Bathing Place	—	J. P. Spencer, C.E., Newcastle-on-Tyne	28
Whitley—Administrative Block at Fir Vale Infirmary	—	E. W. Mountford, F.R.I.B.A., 17, Buckingham-st., Strand, W.C.	28
Walthamstow—Four Shops and Office Premises, Wood-street	—	W. A. Longmore, F.R.I.B.A., Hoe-street, Walthamstow	28
Walsley—Car-Sheds, &c., Seaview-road	—	J. H. Crowther, Engineer, Great Float, near Birkenhead	Mar. 4
Farnham—Council Offices, Fire Station, &c.	—	Paxton Watson, Architect, 1, Adam-street, Adelphi	4
Pontnewydd—Board School (775 places)	—	Landowne and Griggs, Architects, Newport, Mon.	4
Walsley—Extension of Engine-House	—	J. H. Crowther, Engineer, Great Float, near Birkenhead	4
Aberdeen—Additions to Ebenezer Congregational Chapel	—	Rev. Graws Jones Brynrafel, Treynon, Aberdeen	4
Felixstowe—Balmoral Hotel (200 rooms)	—	Thos. Wm. Cotman, Architect, Northgate-street, Ipswich	4
Walsley—Engine and Pump House, Seaview-road	—	J. H. Crowther, Engineer, Great Float, near Birkenhead	5
Wootton Bassett—Passenger Station	—	G. K. Mills, Secretary, Paddington Station, London	5
Downton Rectory	—	J. Alex. M'Connell, Secretary, Estate Office, Downton	7
Bristol—Superstructure of Avonbank Electricity Works	—	Henry Williams, Architect, 24, Clare-street, Bristol	12
Camberwell, S.E.—Infirmary Extension, Brunswick-square	—	Edwin T. Hall, F.R.I.B.A., Architect, 57, Moorgate-street, E.C.	13
Cleethorpes—School, Bursar-street	—	F. W. Croft, Archt., Victoria Chambers, Victoria-st., Gt. Grimsby ..	18
Feltham—Infant School, Cardinal Estate	—	W. Ralph Low, Architect, 10, Basinghall-street, E.C.	22
Watford—Lecture-Room, &c.	—	C. P. Ayres, Architect, Burvale, Watford	—
Millford Haven—Wesleyan Church	—	John Wills, Architect, Victoria Chambers, Derby	—
Hillsborough—New Premises	—	W. J. Taylor, Architect, Bank-street, Sheffield	—
Dalkeith—School	—	T. Sturrock, Clerk, Dalkeith	—
Kendal—Refroniting Shops, 47 and 51, Highgate	—	John Stalker, M.S.A., Architect, Kendal	—
Manchester—Playground and Offices	—	S. M. Chadwick, Archt., Bindloss Chmbs., Chapel-walks, Manchester ..	—
Dunmanway—Offices, &c.	—	Arthur Hill, B.E., F.R.I.B.A., 22, George-street, Cork	—
Castleford—General Post Office, Bank-street	—	Garside and Pennington, Architects, Pontefract	—
Featherstone—Three Houses and Shop	—	W. Hamilton Fearnley, Architect, Featherstone	—
Hull—Bakery, &c.	—	Freeman, Son, and Gaskell, Architects, 11, Carr-lane, Hull	—
Leeds—Excavating for Warehouse	—	Corson & Jones & Perkins & Bulmer, Jt. Archts., Cookridge-st., Leeds ..	—
Horsforth—Ten Through Houses, Featherbank-road	—	G. F. Bowman, Architect, 5, Greek-street, Leeds	—
Dove Dale—Additions to Peveril Hotel	—	Garlick and Flint, Architects, Buxton	—
Leeds—Stable, &c.	—	Fred Mitchell, Architect, 9, Upper Fountain-st., Albion-st., Leeds ..	—
Carlisle—Shops, &c.	—	Joseph Graham, Architect, Bank-street, Carlisle	—
Gorseinon—Baptist Chapel	—	D. L. Jones, Architect, West End, Llanelli	—
Scotby—Villa, Copse-hill	—	Johnstone Bros., Architects, 39, Lowther-street, Carlisle	—
Clay Cross—Six Pairs of Houses	—	Ernest Oxley, M.S.A., Architect, Clay Cross, Derbyshire	—
Leeds—Alterations to Tower Works	—	William Bakewell, F.R.I.B.A., 38, Park-square, Leeds	—
Audenshaw—Wesleyan School, Hooley Hill	—	Burton and Percival, Archts., 150A, Stamford-st., Ashton-u-Lyne ..	—
Great Yarmouth—Fishing Premises on South Dunes	—	George Waller, Architect, Middlegate-street, Great Yarmouth	—
Middlesbrough—Alterations to Business Premises, Newport-rd.	—	A. F. Newsome, M.S.A., Architect, Albert-road, Middlesbrough	—
Stifford, Essex—Schools and Cottage Homes	—	J. Rider Hunt, 181, Queen Victoria-street, E.C.	—
Clay Cross—Dwelling-House	—	Ernest Oxley, M.S.A., Architect, Clay Cross, Derbyshire	—
Leeds—Enlargement of Crown Works, Harehills-road	—	Albert E. Dixon, A.R.I.B.A., Architect, 5, Park-lane, Leeds	—
Middlesbrough—Additions to Villa, Loftus	—	A. F. Newsome, M.S.A., Architect, Albert-road, Middlesbrough	—
Alton—Dwelling-House	—	Ernest Oxley, M.S.A., Architect, Clay Cross, Derbyshire	—
Grantley—Entrance Lodge, Cottages, Laundry, &c.	—	Bland and Bown, Architects, Harrogate	—

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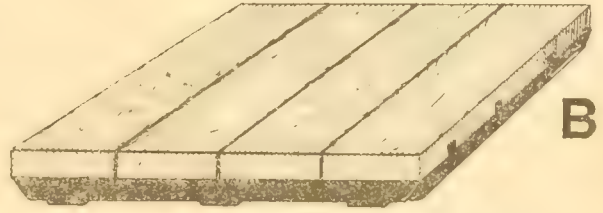


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BUILDINGS—continued.

Middlesbrough—Alterations to Business Premises, Albert-road.	A. F. Newsome, M.S.A., Architect, Albert-road, Middlesbrough	—
Easington—Scaling Board School	Thos. A. Welford, Clerk, Sealing, Loftus, R.S.O.	—
Dovercourt—Restaurant and Private Hotel	J. W. Start, F.S.I., Architect, Colchester	—
Leeds—Colliery Workshop	Brooks and Pickup's Offices, Pontefract-lane, Leeds	—
Mid-lebrough—Semi-Detached Villas, Phillipsville Estate	A. F. Newsome, M.S.A., Architect, Albert-road, Middlesbrough	—
Sherburn-in-Elmet—House	J. M. Fawcett and Son, Architects, 26, Albion-street, Leeds	—
Weybourne-on-Sea—Weybourne Springs Hotel	R. Carter, Architect, Cromer	—

ELECTRICAL PLANT.

Stockholm—Telephone Cables	German Telephone Co.	The Commercial Department, Foreign Office, Whitehall, S.W.	Feb. 16
Long Eaton—Electrical Plant, &c.	Urban District Council	Frank Worrall, A.M.I.C.E., Council Offices, Long Eaton	18
Dundee—Underground Electrical Conduits	Gas Commissioners	Walter H. Tittensor, City Electrical Engineer, Dundee	20
Huelva, Spain—Telephone System	Spanish Government	The Commercial Department of the Foreign Office, Whitehall, S.W.	21
Glasgow—Car Equipments 100	Corporation	John Young, General Manager, 88, Renfield-street, Glasgow	22
Bermondsey, S.E.—Switchboard, &c.	Borough Council	Kineaid, Waller, & Manville, Eng., 29, Gt. George-st., Westminster	25
Brighton—Arc Lamps, &c.	Town Council	F. J. Tillstone, Town Clerk, Town Hall, Brighton	25
Taunton—Tramway Plant	Corporation	Kineaid, Waller, & Manville, Eng., 29, Gt. George-st., Westminster	25
Beckenham—Boilers, Dynamo, Batteries, &c.	Urban District Council	Reginald P. Wilson, 66, Victoria-street, Westminster	25
Darwen—Electrical Tramway Materials	Corporation	R. W. Smith-Saville, A.M.I.C.E., Eng., Municipal Offices, Darwen	25
Bournemouth—Electric Cars (42)	Town Council	F. W. Lacey, M.I.C.E., Boro' Eng., Municipal Offices, Bournemouth	Mar. 2
Bournemouth—Dynamoes, &c.	Corporation	F. W. Lacey, M.I.C.E., Boro' Eng., Municipal Offices, Bournemouth	2
Luton—Wiring Council-Chamber, Town Hall, Free Library, &c.	Town Council	The Borough Engineer, Town Hall, Luton	4
Leeds—Trolley Wires and Attachments	Tramways Committee	The City Engineer's Office, Municipal Buildings, Leeds	8
Glasgow—Electric Wharf Crane (3 tons), Prince's Dock	Clyde Navigation Trustees	G. H. Baxter, Mechanical Engineer, 16, Robertson-st., Glasgow	11
Amsterdam—Electrical Plant, &c.	The Burgomaster	The Direction of Printing Works, Achterburgwal 213, Amsterdam	April 1

ENGINEERING.

Walsall—Purifiers, &c.	Gas Committee	R. W. Smith, Engineer, Pleck Gasworks, Walsall	Feb. 16
Port t. Mary—Two Gasholder Tanks	Port Erin & Port St. Mary Gas Co.	Thomas Newbigging & Son, Engineers, 5, Norfolk-st., Manchester	16
Croydon—Boilers	Town Council	The Borough Electrical Engineer's Office, Factory-lane, Croydon	16
Walsall—Conveying and Elevating Plant	Gas Committee	B. W. Smith, Engineer, Pleck Gasworks, Walsall	18
Plymouth—Deepening Channel in Cattewater Harbour	Cattewater Commissioners	H. Victor Prigg, A.M.I.C.E., 6A, Courtenay-street, Plymouth	18
Dawley—Borehole at Horsehay	Parish Council	Thos. S. Stooke, C.E., Port Hill-road, Shrewsbury	18
Brigstock—Well	Urban District Council	Beeby Thompson, F.G.S., Northampton	18
Wimbledon—Boilers, &c.	School Board	F. Barnes Spencer, Electrical Engineer, Dunsford-rd., Wimbledon	18
Conventry—Heating, &c., Fever Hospital	Rural District Council	J. E. Swindlehurst, City Engineer, 10, Hay-lane, Coventry	18
Swansea—Hot-Water Heating Apparatus, Manselton School	London County Council	G. E. T. Laurence, A.R.I.B.A., 22, Buckingham-st., Adelphi, W.C.	19
Headington—Rebuilding Holton Stone Bridge	Urban District Council	Lee Turner, Surveyor, Hartfield Cottage, New Headington, Oxon.	19
Camberwell, S.E.—Water-Tube Boilers	Lancashire and Yorkshire Ry. Co.	The Engineer's Department, County Hall, Spring Gardens, S.W.	19
Tottenham, N.—Refuse Destructor Plant	Urban District Council	W. H. Prescott, C.E., 712, High-road, Tottenham, N.	19
Manchester—Connecting Lines at Collyhurst (½ mile)	L. & Y. & L. & N.W. Joint Ry.	The Engineer's Office, Hunt's Bank, Manchester	19
Tottenham, N.—Sluice-Valve Hydrants	Gas Commissioners	W. H. Prescott, C.E., Engineer, 712, High-road, Tottenham	19
St. Anne's-on-Sea—Bridge over Railway	H. H. the Nizam's State Ry. Co.	R. C. Irwin, Secretary, Hunt's Bank, Manchester	20
Dundee—Light Railway Material	Electrical Committee	Sir Thos. Thornton, Clerk, Dundee	20
London, E.C.—Fifteen Locomotive Engines and Tenders	Corporation	The Secretary, 50, Old Broad-street, E.C.	21
Bristol—Coal Conveyor, &c.	Gas Committee	H. Faraday Proctor, City Electrical Engineer, Temple Back, Bristol	21
Haverfordwest—Gasholder	Cosford Rural District Council	R. T. P. Williams, Town Clerk, Council Chamber, Haverfordwest	21
Nelson—Station Meter, Brierfield Works	Hardingstone R.D.C.	A. Allan, Engineer, Gasworks, Nelson	21
Hitcham—Trial Boring, Hitcham-street	Urban District Council	Alfred Newman, Clerk, Churchgate-street, Hadleigh	23
Great Houghton—Sinking Well	Burial Board	John Haviland, Clerk, 2, St. Giles-square, Northampton	23
Beckenham—Motor-Wagon	North-Eastern Railway Co.	F. Stevens, Clerk, Council Offices, Beckenham	25
Ipswich—Extending Water-Main in Cemetery	Norwegian State Railways	The Clerk to the Board, Ipswich	26
Neville Hill to Croseghates—Widening Railway (2½ miles)	Corporation	W. J. Cudworth, Company's Engineer, York	27
Christiana—Ten Goods Trucks	Urban District Council	The Director, Machinery Dept., 8 & 9, Jernbanetorget, Christiania	27
Bristol—Culvert (1,376 yds.)	Corporation	The City Engineer, 63, Queen-square, Bristol	27
Low Fell to Ouston Junction—Widening Railway	North-Eastern Railway Co.	Charles A. Harrison, Central Station, Newcastle-on-Tyne	27
Wanstead—Concrete Tanks, Filters, &c., at Sewage Farm	Gas Committee	The Clerk, Council Offices, Wanstead, N.E.	28
Yeovil—Septic Tanks	Corporation	W. K. L. Armitage, Borough Surveyor, Municipal Offices, Yeovil	28
Tipton—Coke-Conveying Plant	Corporation	H. O. Timmins, Engineer, Gasworks, Tipton, Staffs.	28
Wellington, New Zealand—Engines, &c.	Corporation	John Duthie and Co., Ltd., 23, Lime-street, E.C.	28
Swansea—Heating and Ventilating Asize Courts	Guardians	George Bell, Borough Surveyor, 13, Somerset-place, Swansea	Mar. 1
Stafford—Steam Boiler	Urban District Council	W. Blackshaw, Borough Hall, Stafford	2
East Dereham—Four Purifiers	Guardians	B. H. Vores, Clerk, East Dereham	2
Romsey—Flushing Works at Workhouse Infirmary	Waterworks Committee	John Allsop, Clerk, The Abbey, Romsey	2
Lincoln—Deep Boring at Boultham	Urban District Council	P. Griffith, A.M.I.C.E., Eng., 54, Parliament-st., Westminster, S.W.	4
Wallasey—Lancashire Boiler, &c.	Gas and Electricity Committee	J. H. Crowther, Engineer, Great Float, near Birkenhead	4
Stockport—Condensers	Corporation	S. Meunier, Engineer, Portwood, Stockport	6
Bewdley—Two Service Reservoirs and Water Mains (9½ miles)	Works Committee	R. E. W. Berrington, Civil Engineer, Wolverhampton	11
Santander, Spain—Dredger	Derbyshire County Council	The Commercial Department of the Foreign Office, Whitehall, S.W.	11
Dkeston—Widening Gallows Inn Bridge	Argentine Government	J. Somes Story, County Surveyor, County Offices, Derby	20
Rosario—Harbour Works	Rhymney Iron Co., Ltd.	The Commercial Department of the Foreign Office, Whitehall, S.W.	May 10
Rhymney—Large Water-Main		The Engineer, Rhymney Iron Co., Ltd., Rhymney, Wales	—

FENCING AND WALLS.

Bicester—New Walls at Cemetery	Urban District Council	E. F. Willson, Surveyor, Launton-road, Bicester	Feb. 16
Hull—Wood Fencing at Bromfielt Island	Humber Conservancy Commissioners	Martin Samuelson, Engineer, Bowlay-lane, Hull	18
Glasgow—Larch Fencing	Glasgow & South-Western Ry. Co.	The Store Manager's Office, Kilmarnock	19
Coventry—Wrought-Iron Unclimbable Fencing (1,000 yds)	Gas Department	George Winstanley, Engineer, Gasworks, Coventry	22
Ramsgate—Walls Round Destructor Bldgs., Whitehall Fields	Corporation	T. G. Taylor, Borough Surveyor, Albion House, Ramsgate	27
Leeds—Extension of Boundary Wall at Armlay Park	Corporation	The City Engineer's Office, Municipal Buildings, Leeds	28
Leeds—Railings at Armlay Park	Corporation	The City Engineer's Office, Municipal Buildings, Leeds	28
Lowestoft—Timber Protection Wall (length 780 yards)	Town Council	Geo. M. Hamby, A.M.I.C.E., Boro' Engineer, Town Hall, Lowestoft	Mar. 2
Muswell Hill—Oak Fencing		E. Parry and Co., Contractors, 3, Chesilton-road, Fulham, S.W.	—

FURNITURE AND FITTINGS.

Londonderry—Reseating Church	Donaghedy Presby. Church Com.	M. A. Robinson, C.E., Richmond-street, Londonderry	Feb. 21
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PAINTING.

Kirkby Lonsdale—Coachhouse, &c.	J. Wilman	John Kassell, M.S.A., Kirkby Lonsdale	Feb. 16
Ashton-under-Lyne—Albion Old Chapel	Wm. Denton	J. Dunkerley, Hon. Secretary, Albion-street, Ashton-under-Lyne	18
Alnmouth—River Bank House	School Board	M. Temple Wilson, Architect, Alnmouth	18
Blairgowrie—St. Andrew's United Free Church		R. D. Ganson, Clerk, School Board Offices, Lerwick	20
Lenzie, Glasgow—Tradesmen's Cottages (14), Woodlee Asylum	Glasgow Lunacy District Board	D. and J. R. Millan, Architects, 211, Union-street, Aberdeen	20
Dewsbury—Shed		J. R. Motion, Clerk, 35, Cochrane-street, Glasgow	20
Huddersfield—House, Spinkfield-road		Holtom and Fox, Architects, Corporation-street, Dewsbury	20
New Wortley—Classrooms and House		J. B. Abbey and Sons, Architects, 34a, New-street, Huddersfield	21
Clayton—Malting Premises		H. Bannister, Sec., Hawthorne-terrace, Hall-lane, New Wortley	22
Nottingham, W.—Infirmary, Rackham-street		S. Spencer, Architect, 344, Great Horton-road, Bradford	22
Rawtenstall—Baptist Church, Kay-street		H. T. Dudman, Clerk, Northumberland-st., Marylebone-road, W.	25
Bradford— Wesleyan Chapel, Westgate Hill		J. H. Spencer, F.G.S., Architect, Bury-road, Rawtenstall	25
Mid-lebrough—Bank, Exchange-place		Walker and Collinson, Architects, Swan Arcade, Bradford	25
Burntwood—Asylum Buildings	Yorkshire Banking Co., Ltd.	Bedford and Kitson, Architects, Greek-street Chambers, Leeds	28
Cefn—Public Lamps, Pillars, and Brackets (115)	Visiting Committee	Walter H. Cheadle, County Surveyor, Stafford	Mar. 9
Leeds—Crown Works, Harehills-road	Parish Council	Edw. R. Evans, Clerk, Cemetery House, Acrefield	—
London, E.C.—Small Public Hall	A. W. Midgley	Albert E. Dixon, A.R.I.B.A., Architect, 5, Park-lane, Leeds	—
		T. B. Hall, Club Union Buildings, Clerkenwell-road, E.C.	—

PLUMBING AND GLAZING.

Lerwick—Plumbing and Gasfitting Work to Public School	School Board	R. D. Ganson, Clerk, School Board Offices, Lerwick	Feb. 20
Rathmines—Plumbing Work at Plunkett's Area & Hollyfields	Rathmines and Rathgar U.D.C.	F. J. Hicks, Architect, 28, South Frederick-street, Dublin	21

ROADS AND STREETS.

Stretford—Paving	Urban District Council	R. Royle, Surveyor, Council Offices, Old Trafford, Manchester	Feb. 16
Blackburn—Squaring, Dressing, and Laying Flags (One Year)	Corporation	Wm. Stubbs, A.M.I.C.E., Boro' Eng., Municipal Offices, Blackburn	16
Hendon, N.W.—Street Improvement Works	Urban District Council	S. Slater Grimley, Engineer, Public Offices, Hendon, N.W.	18
York—Street Works	Corporation	Alfred Cress, City Engineer, Guildhall, York	18
Egremont—Making-up Middlewood-road	West Lancashire R.D.C.	C. Law-Green, A.M.I.C.E., Chief Sur., Union Offices, Ormskirk	18
Blackburn—Road and Street Works	Highways Committee	W. Stubbs, A.M.I.C.E., Boro' Eng., Municipal Offices, Blackburn	18
Horbury—Cluntergate Improvements	Urban District Council	C. R. Spencer, Engineer, High-street, Horbury	18
Eastbourne—Improvement Works	Highways Committee	R. M. Gloyne, A.M.I.C.E., Boro' Engineer, Town Hall, Eastbourne	19
Wolverhampton—Street Works	Streets Committee	J. W. Bradley, C.E., Boro' Engineer, Town Hall, Wolverhampton	19
Althorpe—Forming Herrett-st., Stone-st., and Halimote-road	Urban District Council	Nelson F. Dennis, Surveyor, Council Offices, Aldershot	19
Tynesouth—Paving, &c.	Corporation	John F. Smilie, Borough Surveyor, Tynemouth	19
Dudley—Forming and Sewering New Streets	Public Works Committee	John Gammage, Borough Surveyor, Town Hall, Dudley	19

THE BUILDING NEWS

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DESIGNING EN BLOC OR IN DETAIL.

THERE are two ways of treating a building or a group: one is to prepare a design for a building, so to say, in the mass or in the lump; the other way is to design it with care for details. Surveyors treat their special work much in the same way: they estimate the building in the "lump," that is to say they "lump" their trades, or put a "lump" sum down, if they wish to shorten their labour and avoid detailed quantities and estimates. Both kinds of "lumping" are useful, and often necessary. The architect's method of designing in the mass has one advantage, and it is an important one, over the detailed or analytical process; that is to say, it allows him to study his building or group of buildings as a whole, to grasp their general effect and grouping. In the initial stages of design it is generally a good plan to think out the scheme to a small scale, disregarding constructive details and fittings; and the practice of inviting small sketch designs for important public buildings, to select a general scheme before a second or final competition, has many advantages. On the other hand, a man may be a skilful planner, and pay particular attention to his details of construction, and yet be quite unable to compose a decent exterior. We have to consider these two classes of designers. In the profession they can be distinguished broadly into those who take special branches, and those who are general practitioners; but this is not always true. We find that mental constitution has something to do with the distinction. Some men can grasp better than others: they look at a building as a composition, as a piece of design or a piece of music, not as a mere collection of apartments and trades; they cannot break themselves up, to use a Ruskinian phrase, into "segments of men," to study details of construction, or even of plan, or to take a special delight in any craft. These men are good organisers and marshallers of facts, but they have a distaste for dry details or analysis. Others, as we know, are masters of detail and of construction, or of plan, and they like to begin their design by looking at the problem as made up of several pieces or factors without much regard to external unity or cohesion. But then there is another class, who like "lumping" their designs; in other words, they look at the design really as consisting of so many sheets of drawings for contract, for whom this plan of regarding buildings is more profitable. To them detail is simply regarded as troublesome and profitless. We must take care to distinguish between the first and last kinds of designers. The first is a born artist; the latter the average and perfunctory practitioner, who avoids detail because it means extra work, and if he can get his five per cent. commission on a set of drawings to an eighth of an inch scale and a set of specifications, with general supervision, without extra labour in preparing details, so much the better it is for him. Our readers will see at once that this is not the kind of "lumping" that will commend itself to the true artist or conscientious architect. The modern type of professional Philistine who has a large general practice is an adept at showing as little detail as he can, leaving all construction, fittings, and decorations to the general or sub-contractors. To such men it is very convenient to adopt an eighth of an inch scale, to hatch over or colour with a

dark tint all sections of floors and roofs, to show nothing definite of any internal detail or decoration. Special firms and sub-contractors like this indefiniteness of finish and vagueness, because it leaves them with a free hand, and does not bind them to any design. The "lumping" system of this kind is a rather contemptible way of doing as little as possible, and of avoiding details.

As a good deal of our everyday architecture is the result of one or other of these systems of design, the subject deserves more consideration than has been bestowed upon it. It will be admitted that there are some kinds of building where attention to detail is paramount. All those built for special objects like a technical institute, a restaurant, or building to be used as a laboratory, stand on a different footing to the ordinary block of offices or dwellings. A special function has to be studied in each. The architect would not be doing wrong if he began with the requirements of the function, whatever it was; that is, designing with some minuteness the bar, its fittings, and space for customers, or the technical classroom with its special fittings, or the bath, as the case may be, and making it the nucleus of the building. A hospital specialist would begin to arrange one of his wards, in regard to the number of beds, the floor superficial to each, the position of windows, at one end the closets and bath-rooms and isolating lobbies, at the other the nurses' rooms, scullery, and other adjuncts, before he thought of making the design for one pavilion. In this manner he would logically working out the problem in the best manner, avoiding any waste of space or material. Or to take a large block of shops with residences over. It would be advantageous to commence with one of the shops and its fittings, staircases, lifts, to give details of the kind of fire-resisting floor and the ironwork construction, girders required and their strength; in short, to study the detail before settling upon the general scheme. Having decided upon these details of construction, it is easier to make the general design to clothe, as it were, the skeleton of construction with suitable dress. The contrary method would entail expense or alteration. In many buildings construction enters largely in the shape of flooring, roofs, galleries, &c., as they would in a theatre or public hall; in all such undertakings the architect, who is a master of detail, has the best chance of success. Sometimes a large engineering plant has to be arranged for, as in heating and ventilating a theatre, or in hot-water apparatus for baths, washhouses, workhouses; in which case the special qualifications of the architect are called for, or he must perforce be compelled to find to his cost that his provisions are insufficient for the requirements of the engineer. We could instance many buildings that cost its promoters a heavy extra percentage above the contract, owing to the imperfect provisions made for heating and other apparatus; they are of constant occurrence. In law courts, libraries, schools, and classrooms for technical education, the wood and other fittings may be put down at from 30 to 50 per cent. of the cost of the building. The man who knows the details must necessarily become the more successful architect for such works.

There are other buildings where a special appointment occupies a much less place in the design; as, for example, in warehouses, factories, agricultural buildings, labourers' dwellings, and common houses, where everything is of the plainest description, and of no special design, and where the rooms may be of any shape. In these the architect may be free to devote his attention more to the general effect or mass of his design. It may, indeed, be an advantage, as in a group of cottages, to study the grouping and artistic design, the details being of little importance; though, as we say elsewhere, some skill is

necessary in the design of small cottages, as in the provision of certain conveniences that enable a living-room to become also a cooking-room by providing those little articles like shelves, dressers, &c., near the fireplace. Yet in general it seems, we think, that in proportion to the simplicity and homogeneity of the structure, the stronger becomes the claim for considering the general outline and mass. The more complex the plan, the less it comes under the control of the artistic function of the architect. This is a proposition that we have not seen stated in works on design very clearly; but it is one that receives confirmation and support from many of our buildings. The more complex they are in plan the less they appear to be governed by artistic principles of composition or modelling. Take, for example, our infirmaries, our prisons, our hospitals. Those which are simple in function, such as the village church or a simple cottage, or a group of farm buildings, are the most picturesque and amenable to the artist.

Homogeneity of structure and singleness of purpose are qualities that lend themselves to architectural composition. A cathedral, a great monument, a palatial gallery, a mausoleum, and the like are buildings that are best treated in the lump or in mass. A partial or fragmentary study of them would be unsatisfactory—that is to say, the architect can in each of these cases model his structure as a whole, as a sculptor would model a group, regarding less the structural detail than the effect of the whole. He works, so to speak, as he would in a plastic material, or as the sculptor does in stone, and he produces a monumental result. If he were to differentiate between the materials actually employed, the result would be less harmonious, though perhaps more truthful. In other words, if we are to consider beautiful form in the abstract only, we must observe the idea of a homogeneous structure instead of one made up of several materials and parts; but for utilitarian building we cannot consider design in the abstract—every part and material must be dealt with and expressed. If our readers have followed this argument, they cannot have any difficulty in deciding the principles that should determine which mode of designing ought to be adopted. What can be more absurd than a building intended for, say, a warehouse or wholesale commercial house, designed with porticoes, wings, cupolas, and other ambitious Classical features, when it is largely composed of shops and showrooms, and in which iron construction and special fittings enter? These palatial features have no place in such buildings, though they would be suitable for a town-hall, a court of justice, or even a sessions house. They are out of place also because they are intended for stone. A good example of a monumental façade is that for a clubhouse, such as that awarded the Soane Medallion we gave last week; but the same features would be misplaced in a technical college or in a building half of brick and iron. If we consider that all palatial and monumental architecture has been evolved from marble and stone, and that, therefore, the forms assumed belong to the historic periods of the art, we shall at once see how ridiculous a thing it is to drag these forms into modern building requirements. The dome or cupola, the portico with its entablature and pediment, are types that are associated with temples and palaces. They are forms also that have become academical, and that can be treated better as a whole or "in the lump" than by piecemeal.

These are forms that, having become, as it were, colloquial to the Classical architect, he is apt to use them in all conceivable occasions, even when his buildings would be better expressed without them, or in a quite different language. The "lumping" system is no doubt easier: it is impatient of all

details or structural methods: it is conventional, more popular, than designing in part: it is more artistic and pictorial, and impresses the public mind;—but, for all this, it is at variance with the spirit of our day, which absolutely looks for utility in all things—internal planning and technical perfection in every detail. The architect who has, say, a school or a laboratory or hospital to design, must first study the best types of plan and fittings, if he desires to show his professional skill;—matters of elevation, grouping, or modelling would be of subordinate importance. If it is a modern theatre or hospital, the planner must study every detail of stage management or sickward; it is no use for him to have a general knowledge, it must be special. The consequence of this modern tendency of considering buildings in detail has no doubt been one cause of the neglect of composition as an art. Outline and grouping are neglected, and we have a number of ugly, ill-shaped hospitals, institutes, theatres, and other buildings. In proportion as we get more utilitarian in our tastes, so will our architecture lose grace of outline and mass. The corrective is to be found in adopting one or other of the principles mentioned, and in making composition one of the essential branches of the architect's education. The two methods of designing we have considered, which may be termed the synthetic and the analytic, have their influence in other ways. They affect draughtsmanship. What we have called the lump system designing *en bloc* favours artistic sketching. The architect can make a rough sketch of his design from a rough plan, which he can improve and touch up after he has satisfied himself of the *tout ensemble*, the balance or arrangement of the parts—it thus facilitates composition. On the other system, plain geometrical drawing appears to be the most suitable for delineating a building in detail, as each part has to be separately defined. In fact, it is the mode of representation used by architects and engineers in plain or structural work, the method of plan, elevation, and section. As we have hinted, there is one danger in the first method—it often leads to slovenly drawing, to easy and rough methods of indicating detail, and to rough sections. We find roofs, floors, and walls simply blacked or tinted one colour, as if they were solid and of the same material. These are drawbacks of the system of *en bloc* design which can only be counteracted by detailed sections to a larger scale.

SMALL HOUSES AND COTTAGES.

DESIGNING small houses and cottages is an art that very few architects can be said to have mastered. They are content to follow in the conventional path of designing houses as a matter of business and to the order of the client, from whom they receive certain definite instructions. The result is the planning of a house in which two minds have been at work—often at variance, the client enforcing his injunctions upon the architect. The traditional “two-cooks-spoiling-the-broth” theory is exemplified in many modern houses, where we find the speculative builder's villa of very commonplace type flavoured with a little of the piquancy of the “Queen Anne” or the old Hall or Manor-house. In the interesting paper read on this subject by Mr. Raymond Unwin before the Society of Architects on the 7th inst., the subject is treated from the commission of the architect throughout the various steps of the design. The architect should certainly know something about the family life and personality of his client before designing him a house; and there can be no question that the reason of so many failures in house-planning is because the architect has not become acquainted with the domestic habits

and taste of the client and his family. As Mr. Unwin says: “Each commission is a fresh problem, full of human interest.” The architect ought to look at the problem from several aspects, as a “setting” for the life of the client, his tastes, his position in society, his financial position. As a matter of fact, he simply receives his instructions in a perfunctory kind of way, and tries to comply with them as best he can. The personality and family life of the client have to be studied and satisfied, though each artist will do this from his own point of view, and will consequently interpret the requirements differently. The consequence is that no two will see the problem in the same light, and that we obtain individuality in each solution. The process sketched by the author of the paper, excellent as it is, is not that followed by the architect, who may have a dozen or more works in hand at the same time. To make ourselves acquainted with our client's wishes, mode of life, and habits can only be attained by a visit or stay at his house, and by several conferences and discussions, not as generally from the casual visits of the client or his replies to questions put to him. All must agree upon the importance of this first step—namely, the social position and mode of life of the client; the next is of equal importance, a personal examination of the site, and, if possible, thinking out the plan and design on the spot. Unfortunately, this is sometimes not so easy when the site happens to be a journey's distance. Both the plan and external treatment must be brought to the touchstone, and to this end not only should the aspects and prospects be considered, so as to obtain as much protection from prevailing winds and rains, and as much enjoyment as possible for the occupants, but the house should be so positioned as to look in its place, as a natural part of the country and landscape. This latter requirement has too often been neglected: we see a villa perched on a very uncomfortable hill or knole which a little arrangement might have obviated; another harmonises badly with the landscape around—the building is too flat and horizontal in its lines for the precipitous rock or spur it occupies;—it should have, so to say, carried on the natural lines or accentuated them by lofty roofs and turrets, instead of abruptly arresting them. Then we see positions that ought to be occupied by low and spreading buildings, as in valleys and under hills, bristling with turrets that appear puny under the lofty hills behind.

We cannot follow all the suggestions made by the author of the paper to which we refer our readers. The suggestions that harmony rather than strong contrast in colour of walls and roof surfaces should be sought, that local materials and local methods of using them be employed, letting the surroundings suggest the colouring of the building, whether low-toned colour or otherwise, are sensible. As regards the location of rooms in relation to sunshine, something will depend on situation: in the South Coast plenty of sunshine may mean intolerable heat for many weeks in the year; but in other localities, as in the North and Midland Counties, the rule to have the rooms placed to obtain ample sun may be followed without much restriction. We quote the remark of the author on this point: “The general rule, then, would seem to be to contrive as to get the sunshine into a room at the time when it is likely to be most occupied. Let a study or breakfast-room be east or south-east, a general living-room or drawing-room south and south-west. A good western window in the room we most occupy in the latter part of the day gives us many an extra hour of daylight, while the opportunity it affords us of habitually seeing the bright colour of sunset is a privilege which is worth some effort to obtain. A kitchen is best north-east or east, for the first coming down

into the fireless house may well have its cheerlessness reduced for the servants by what sunshine is to be had at an early hour; later in the day, when the kitchen is hot with cooking, the heat of the sun should not be added. A bathroom and bedrooms, too, are pleasant with an eastern aspect, though some cannot sleep in a room into which early sunshine can come.” These considerations, however, may be sometimes modified by prospect very materially.

Referring to planning of small houses, we quite agree with the remark that it is “infinitely less of a sacrifice to reduce the number of rooms than it is to reduce the size of them all until they are mere boxes.” In every small house a first consideration should be to secure one large room, to give comfort and dignity, and this may be, and has been, secured in some recent houses by making the hall the chief living-room; it may be carried up two stories to form an organ gallery. In one plan described, such an arrangement was made. “The gallery leading to the balcony, the landing, and the staircase, are all thrown into the hall, the stairs being so arranged as to afford a screen to the fire, forming a sort of deep ingle with low ceiling under the landing, and this ceiling continues under the organ-gallery and balcony, the central part of hall being open to the full height. The sense of cosiness in this ingle is greatly enhanced by contrast with the lofty open space outside, while the variety in lighting, whether when the morning sun streams in at the great east window, or when the ingle glows red in the gathering dusk, adds a perpetual charm. In the gallery is a second fire, with a lounge seat by the organ under a canopy formed by the half-landing of the second-floor stairs.” For this large hall the remainder of rooms are reduced. A “den” or meal-room, with kitchen offices and four bedrooms, are provided. The house of a literary man who entertained a good deal of society was planned with a hall at once a comfortable living-room and a dignified entertaining room, while the meal-room has been kept as small as would allow of a little dinner-party, the fire and sideboard being placed in the corners. To utilise the corners of a small room for these requirements and for the door is the best way to economise room.

Without plans it is of little interest to describe arrangements; but the authors are following the ideas of a few leading architects who are trying to make the domestic plan once more as of old—honest, as an expression of daily domestic life. The staircase has at last been recognised as one of the principal features, and instead of inclosing it between walls, the aim is now to make it visible, or, at least, to screen it partly off, and give a glimpse of it from the hall. Study and bedroom can also be combined for a literary man. The use of double doors and windows is of great value to comfort and quiet. In cottage planning, of course, a good-sized living-room is quite as essential, for the functions of a kitchen have often to be added to it. Very few planners can arrange a living-room that can be used for cooking as well. Mr. Unwin took an example of a cottage designed for a client near a small Derbyshire town, and built on a mound, with fine views in all directions. The main windows were desired to be on the west, and the plan was an oblong with plain low span roof. We refer our readers to the description given in the paper. One good living-room occupies the western end, with a small window to the north, enjoying a fine prospect. The outer door is placed between the stair-foot and the other door; the fireplace on the north side in a deep recess, one side being devoted to work, the other side has a low seat. On the working side is a small dresser, with small fixed bowl for washing up, drawers, cupboards, and plate-rack. There is a hatch between this room

and the scullery for handing through utensils, &c. All the kitchen work is thus done in the living-room, and confined to one corner of the fire recess. Four bedrooms are obtained up-stairs, each with a corner between the fire and window, where one can sit.

The author takes a sensible, as well as artistic, view of the small house and cottage as a problem of design; he rejects, and not without reason, the ridiculous and pretentious design, with its full complement of rooms and offices, as we find in our country and suburban dwellings. The object of a good plan in a small house should be to provide for the daily habits and tastes of the occupants: their real wants should be first considered in the plan, each requirement met, and the main living-room at least be made a dignified unit in the plan, of good dimensions, and in the humble cottage be provided for both as a kitchen and a living-room. These are principles that hitherto have not met with the sanction of the architect, who has been persuaded, often against his better judgment, to make them repetitions on a small scale of a gentleman's residence. The smallness of the rooms, the cramped entrance-hall and staircase are quite subversive of comfortable family life; the living-room or dining-room is often little better than a box in which a large family is unable to stir. Many of the so-called superior building estates about London are spoiled by these cramped and ill-studied dwellings with very ordinary features of design internally or externally, with no convenience in the shape of cupboards and recesses—an ignoring of the existence and place of useful furniture, such as dressers, sideboards, and pianofortes. Indeed the fault of modern house-designing has been to make a plan to which all wants and fittings must subserve, instead of one that shall adapt itself to the requirements and fittings of the occupants. We have not referred to external design or treatment; but, of course, this in every instance should be controlled by local materials, and be the outcome, as far as possible, of the plan and the habits of the owner. Our leading architects have done something in this direction by a more honest interpretation of facts; but we still neglect the landscape as a factor in country-house designing, both in regard to grouping and colour.

ROYAL ACADEMY EXHIBITION, 1901.

THE one day on which architectural drawings may be sent in this year is Friday, March 29, and these must be delivered by a personal agent to Burlington House, and no works in cases will be received. On Saturday, March 30, and on Monday, April 1, oil paintings are to be sent in; Tuesday, April 2, is reserved for Sculpture. The necessary forms and labels can be procured during the month of March only from the Academy on receipt of a stamped and directed envelope. Only gilt frames are admissible for architectural drawings.

We shall be glad if our readers who intend to submit works will send their drawings to us to be photographed before they are forwarded to the Exhibition, so that our reproductions of accepted works may be included in our series of Academy illustrations, which will be published after the galleries open, as in former years. We will receive and deliver works for our contributors; but the labels, &c., as above, must be sent complete with the framed drawings ready for despatch to the Exhibition.

A well-known and accomplished architectural artist writes with regard to the Royal Academy Exhibition:—"Personally, I have very much lost interest in it, for the rejection of some of the best examples of modern architecture took place last year, and I hear of universal complaints." He adds: "I have good reason to believe that the hanging was almost entirely, if not quite, left to servants. I have been wondering if some sort of direct appeal could not be made by you to the R.A. and A.R.A. architects, urging them to take more interest in the

Architectural room, and more especially in the hanging."

We have from time to time been foremost in our protests, and, not content with general statements of complaint, we have particularised individual instances which have occasional real grounds for discontent, and sometimes well justified astonishment as to the selections made quite as much as to the rejections permitted.

By no standard of merit has it been possible to explain such unaccountable results, and if we did not personally know the architect members of the Academy, we should no doubt be liable to give credit to the tales which obtain credence as an explanation for this unfortunate state of affairs. At one time it was more than likely that no architect member of the Academy would be elected on the Hanging Committee. This defect was provided against by the timely action of Mr. Alfred Waterhouse, R.A., whose hanging has given perhaps more satisfaction than that of any other architect member. It is impossible to please everybody, and the task of selection we know perfectly well is an extremely difficult one; but we say it is a positive scandal that half a dozen, and even more, works from one man should be well placed, to the exclusion of even one contribution from other equally capable and artistic architects. Men of the first rank whose work is second to none are rejected over and over again to give place, as if by *mal à propos* intention, to second-rate drawings of competition designs and unexecuted schemes. This is no idle diatribe of a disappointed disturber of the peace, or of one who in the least degree desires to disparage or displease the Hanging Committee, whose difficulties we entirely appreciate; but this difficulty is due mainly to the out-of-date rule by which any contributor may send as many as eight works. All this has been said before; but the scandal remains, and the scramble goes on. Judging by the results—and good intentions count as nothing—as compared to the results on the walls: no trouble appears to be taken to minimise the effect of this octachord rule, hence the discord and clamour for a remedy. We hope, however, that those in authority will not turn a deaf ear, but will insure impartiality to all by taking a little more personal care to exclude more than a fair proportion of space to any one man, and to prevent trading firms from sending in unacknowledged designers' works as their own, and in this category we mean shopkeepers pure and simple. It would be hardly possible in all cases to exclude the contributions of the commercial architect who keeps a ghost, and sends his drawings duly signed as if the name in the catalogue was identical with that of the real author.

There is this to be said, that the architect member of the hanging committee represents only one vote, and as the absurd theory is still adhered to, that the quorum of the committee present must vote on every exhibit, the rate at which the frames have to pass makes the process practically impossible. Tired-out the members necessarily become, and in this wild-goose chase of a so-called system many a bird of merit, but possibly modest plumage, so to speak, gets thrown out and relegated to the vaults below, with a red and a white chalk-mark on its back, as unfit for exhibition. The majority of the committee know personally precious little about what is going on in the architectural world, and sometimes it is just possible that some of the members care less. The architect member is busy with his own works, and too much occupied with the pressure of his own practice to notice what is occurring among his professional brethren, except in his own circle. It is perhaps for this reason that care is sometimes not taken to insure good prominence to the more important works of the year, instead of filling the walls, as occurred last summer, with a patchwork of inconsequential villas and kindred country little buildings or even speculative designs for same.

If we could do anything to further the suggestion of our correspondent we should only be too glad; but the A.R.A. members have nothing to do with the selection directly. They might indirectly do a good deal of good; but it is easy to realise that they hesitate in interfering with their seniors.

New offices are about to be erected for the Midlothian County Council at the corner of Lawn Market and George-street Bridge. They will be faced with ashlar, and are to be built from plans by Mr. Macintyre Henry, of Edinburgh.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AN ordinary general meeting of the Royal Institute of British Architects was held on Monday evening, Mr. E. A. Gruning, Vice-President, in the chair. The secretary, Mr. W. J. Locke, having announced that the President, Mr. W. Emerson, was unable to attend owing to ill-health, read some remarks by the President on the death of the Queen, and the address of condolence and loyalty to the King presented by the Council on behalf of the Institute. The Chairman announced that the Royal Gold Medal for Architecture would not be awarded this year. By show of hands, the following seven Fellows, 23 Associates, and one Hon. Fellow were unanimously elected:—As Fellows: Messrs. F. S. Baker (Toronto), A. C. Blomfield (London), C. J. Blomfield (London), G. F. Collinson (London), W. Flockhart (London), John Leeming (London), and Joseph Leeming (London). As Associates: T. B. Ball (Weston-super-Mare), E. W. Banfield (London), G. Brumell (Morpet), H. M. Cantley (Ipswich), W. G. St. John Cogswell (London), W. E. B. F. Crook (London), H. A. Douglass (Crowborough Cross), T. W. Gordon (Nottingham), A. H. Goslett (Great Stanmore), Shirley Harrison (Leicester), C. E. Hutchinson (London), A. L. MacGibbon (Edinburgh), R. H. J. Mayhew (London), W. V. Morgan (Carmarthen), R. W. Owen (Liverpool), A. Wyatt Papworth (London), J. Quail (Manchester), F. J. O. Smith (London), E. J. Trench (Cambridge), C. B. Thomas (London), H. A. Tinker (London), P. J. Turner (London), and W. J. Walford (London). As Hon. Fellow: Sir Lawrence Alma-Tadema, R.A., F.S.A.

PLANNING OF ASYLUMS.

A paper on this subject, illustrated by numerous plans, sections, and elevations, written by Mr. GEORGE T. HINE, F.R.I.B.A., was read by Dr. Newington. The author observed that asylum construction embraced the study of almost every description of building, from a church to a cowshed, and the art of combining so many dissimilar structures into one harmonious whole, with the engineering skill necessary to provide for and supply heat, light, and water to what is practically a little town, made asylum architecture an almost distinct profession in itself. Further, asylums are built for people who have to be watched, nursed, and provided with employment and recreation under conditions inapplicable to sane people, and to provide for all these, while the subjects are under enforced detention, a very special knowledge is required to make their lives bearable and, as far as possible, pleasurable. In order to make his paper of some use to the student of this branch of architecture, he proposed dealing chiefly with asylums at home and their most fitting form of planning, and referring to some of the most interesting examples in foreign countries. In the course of a brief

HISTORICAL SKETCH

of the building of public asylums, the author stated that there was no certain evidence of asylums for the insane before the Middle Ages. Up to the end of the 18th century such lunatics as were not at large were confined in prisons or in the few houses then erected for their accommodation, and were frequently treated worse than felons, often with the greatest cruelty. But in the year 1796 the "Retreat" at York was founded by the Society of "Friends," an institution where an intelligent system of treatment was initiated and carried out under the able direction of Mr. William Tuke. This institution and the novelty of its treatment constitute a landmark in the history of lunacy. It resulted in the passing of an Act in 1818 permitting county justices to erect asylums for the accommodation and treatment of pauper lunatics. In 1845 another Act was passed, making it compulsory on local authorities to provide asylums for the insane in boroughs and counties throughout England and Wales. This Act established the present Lunacy Commission with six paid Commissioners, whose work of inspection and direction has done so much to ameliorate the condition of the unfortunate people under their care. Turning to the actual buildings, the author describes some of the most notable erections since the Act of 1845, indicating the various stages in

THE EVOLUTION OF ASYLUM PLANNING,

a study of which is essential to a proper appreciation of its latest developments. Existing types

of plan are all more or less developments of the corridor and pavilion systems. In the early days the corridor system, consisting of a long gallery, with single rooms opening out of it, was the only recognised principle on which an asylum could be built. The form was usually quadrilateral. After the Act of 1845, while the internal arrangements savoured less of restraint, the principle of the corridor system still prevailed. The first development was an attempt at classification by the introduction of a ward for the sick and infirm on each side of the building; the number of cells was reduced and more patients were allowed to sleep in associated dormitories. In the seventies special provision began to be made for epileptics, and the Lunacy Commissioners in 1874 published a plan designed by Mr. Howell for an epileptic ward, which has been adopted with trifling variations in nearly every asylum designed within the last twenty years. In the decade 1871-80 the most notable departure in planning is met with in the Lancashire County Asylum, at Whittingham, designed in what Burdett describes as the corridor-pavilion style, and characterises as one of the finest specimens of asylum architecture in England. The Gloucestershire second county asylum, erected on the pavilion system, the blocks being arranged in echelon, was the first of this type erected in England, and may be said to have originated the oblique or broad-arrow form of corridor now so commonly adopted in asylum designs. The Surrey second county asylum at Cane Hill, one of Mr. Howell's chief works, and accommodating 2,000 patients, is on the pavilion type, the blocks radiating from a main corridor of horseshoe form. Criticising the variation of floor levels in this building, which necessitated flights of steps in the corridor, the author was of opinion that this irregularity could have been avoided by a more careful consideration of the surface levels of the ground and a little more excavating. He urged architects designing asylums to give a first consideration to the site. In many of the plans coming under his official notice the buildings are generally left to adapt themselves to the site rather than the site being adapted to the buildings. Describing the Claybury Asylum, designed by himself, the problem to be solved was how to accommodate 2,000 patients within reasonable distance of the administrative centre without prejudice to the position and aspect of their wards. The plan he adopted was a modification of the echelon type, the wards being approached from obtusely oblique corridors, the pavilion system being almost a necessity from the conditions issued. The asylum is built on the top of a hill, falling all ways, and by removing the apex of the mound, representing nearly 100,000 yards of soil, which was well disposed of in filling up a valley to the north of the asylum, a level plateau was obtained, sufficient to allow of about half the patients' blocks and the whole of the administrative department being erected at one uniform level; the remaining wards being slightly lower, but in no case more than 5ft. below the central buildings. At Bexley Asylum the author first introduced the villa system on a tentative scale of three villas holding thirty-five patients each, and a detached hospital for fifty phthisical cases or others requiring isolated treatment. In this asylum, which accommodates 2,000 patients, all the wards communicate with one another, and an officer may pass from one end of the male or female side to the other without retracing his footsteps or being obliged to return to the main corridor. Bexley has proved so satisfactory that the London Asylums Committee have arranged with Mr. Hine to use the same plans, with a few modifications and improvements, for a second edition of this asylum at Horton. Numerous other asylums were referred to, the author indicating their distinctive features and in many cases exhibiting plans. The London Asylums Committee have found it necessary to add

TEMPORARY BUILDINGS

to some of their asylums. These erections, chiefly of wood and iron, provide accommodation for 1,700 patients at a total cost of about £173,000, averaging £100 a bed—a costly expedient, considering the limited life of these structures.

SCOTCH ASYLUMS

are administered by a Board of Commissioners, whose duties, though similar in many respects to those of the English Commissioners, are exercised under different laws and with different results in the planning of these buildings. The system of

housing in the acute hospital the curable and incurable cases together is encouraged by the Scotch Commissioners, who consider it undesirable to separate entirely the two classes. This view is upheld by Dr. Conolly, who considers the absolute separation of the curable from the incurable to be neither practical nor desirable—the incurable patients being generally fitter companions for the curable than the curable patients are. English medical experts, however, hold that a hospital, totally distinct and apart from the asylum, for the reception and treatment of new cases which are not diagnosed as hopelessly incurable must prove an important factor in the cure of lunacy. It is well known that many forms of insanity are curable at an early stage, but by neglect or unfavourable conditions often result in permanent and incurable disease.

HOSPITALS FOR LUNATICS.

In 1889 the London County Council appointed a committee to inquire into and report upon the advantages of the establishment, as a complement to the existing asylum system, of a hospital with a visiting medical staff for the study and curative treatment of insanity. The committee held meetings, and invited leading medical experts to give evidence. Their report showed the evidence to be greatly in favour of the scheme, and they summed up strongly recommending the establishment of such a hospital. The County Council, nevertheless, ignored the recommendation, and have continued building asylums on the old lines. Other county authorities, however, have taken up the matter, and are providing hospitals for the reception and treatment of curable cases. The provision of an acute hospital the author considered to be one of the most important evolutions in modern asylum planning.

CONTINENTAL ASYLUMS.

Various plans were shown of German asylums, and details given of the villa system as seen in the asylum at Alt Scherbitz, which may be said to have originated this type of planning, now adopted more or less in modern American asylums, and more recently, but to a less extent, in England. The villas are constructed very much like boarding-schools, with day and classrooms on the ground floor, and associated dormitories above. The doors and windows are open, and the patients come and go as they please, wander about or work in the grounds, enjoying comparative freedom, but always under the watchful eye of carefully-trained attendants. No wall incloses the estate, only a light and easily-climbable fence. The gardens surrounding the houses in the central establishment are inclosed with palings, grown over with plants and creepers. The colony is bounded on the south by the river Elster, which flows at the foot of a steep hill in the grounds, and there is nothing to prevent a patient rushing down the hill and plunging into the river. Great value is attached to residence in the colony, and patients are given to understand that their stay there depends on their good behaviour, and are thus encouraged to exercise self-control. Having given an account of asylums as they are, the author went on to deal with

FUTURE POSSIBILITIES OF ASYLUM DESIGNING,

and then to give a detailed description of an asylum as it should be, instancing a building to accommodate, say, 800 patients, with provision for future extension to 1,200. As an illustration, the plans were referred to of the new East Sussex Asylum now erecting at Hellingly, which has been designed on the most modern lines, the whole scheme having been most carefully thought out by a committee of the county council, with Dr. Hayes Newington at its head, whose wide experience, acquired in many years' association with asylum work, gave his committee an immense advantage in determining the basis on which they should work. To understand the first principles of asylum construction, it is necessary to know something of the eccentricities of insanity and the habits and treatment of the insane. The author recommended the student in asylum planning to make friends at all opportunities with the medical experts, and to study the subject in the light of those whose duty it is to look after the insane. The architect can materially assist the doctor in both the cure and protection of the patient by the careful consideration he gives to the details of planning and construction of the asylum, and in doing this he will find that he must design buildings which give security without appearance of

restraint. The ever-present sense of detention is, in a way, as inimical to cure as were the cells and fetters of the 18th century. In

THE IDEAL ASYLUM

the most important building must be the acute hospital. Here it is that every patient, unless hopelessly incurable, is admitted, and during his stay in this hospital his future life is probably determined, whether he shall recover and go back into the world, or whether he shall pass on to the main asylum for the remainder of his days, to eke out an unhappy existence at a cost of more than £30 a year to his country. On every ground we cannot afford to neglect anything—consideration, care, or money necessary to produce a building which affords the doctors the best opportunities for treating and curing their patients. Any money thus spent will prove the truest economy in the end. The various parts of his ideal asylum having been discussed in detail, together with the engineering works, internal fittings, laundry, systems of heating and ventilation, &c., the author concluded his paper by a reference to the cost. He was of opinion that a well-built asylum, designed on liberal principles, and fitted with all modern appliances, cannot be erected for much less than £300 a bed. Twenty-five years ago Nottingham Borough Asylum cost £170 a bed. But that the increased cost is not out of proportion to that of other building works is shown by the report of the Metropolitan Commissioners, where the cost of fifteen asylums erected before the year 1845 is stated to have averaged £200 a bed, some even then approaching as much as £300 a bed.

In the discussion that followed, Dr. MURRAY COOK, one of the Commissioners in Lunacy, advocated the plan of providing in all asylums a separate detached hospital for the special treatment of all recent and apparently curable cases. The rooms for single cases were frequently too small. Plenty of steam coils should be substituted for flues, which often gave a good deal of trouble.

Dr URQUHART mentioned that the latest model in asylum planning in England was that at Hellingly for the East Sussex County Council. Mr. CLIFFORD SMITH and Mr. PERCIVAL GORDON SMITH, of the Local Government Board, also joined in the discussion, and a hearty vote of thanks was passed to the author.

ENGLISH ARCHITECTURE OF THE NINETEENTH CENTURY.*

LOOKING dispassionately and broadly at the century which has recently been completed, it is seen to have opened for England in turmoil, poverty, and privation, its people being borne up by a spirit of high patriotism. This period was followed by one of recuperation and then by rapid, at times too rapid, trade advancement, as the power of the steam-engine was developed and our coalfields were opened up. Contemporaneously there came over the country a marvellous revival of religious feeling, both in the Established and Nonconformist Churches. Towards the close of the century these fiercely rapid movements settled down into steady commercial prosperity and generous religious tolerance, with less exuberance but more depth and solidity in both; and there has developed a still steadily advancing tendency to educate the people more and more highly, and to promote healthy municipal and family life, with comforts and elegancies within the reach of all both in their own homes and in public institutions. Speaking now of the country's architecture, it will be noted that the 18th century had seen the gradual decadence of a true English Renaissance style, and the substitution of formality and precise rule for the originality introduced by Wren and maintained by his immediate successors—alike in important buildings and in the comfortable square-brick dwellings of the middle classes. All design was based upon the Roman orders, which had been reduced to a system of precise proportions, on no account to be departed from, and this had become so entirely a fixed principle that even the discovery of the much more beautiful Classic work of Greece, with its varying proportions, had hardly shaken it. At the commencement of the 19th century, consequently, all English architects were by training and education Classic purists, and were divided into two schools—Roman and Grecian—the many followers of Sir W. Chambers forming the first, and Inwood leading the second—

* Read before the Society of Architects, Feb. 21, 1901, by G. A. T. MIDDLETON, A.R.I.B.A.

that is if during the first twenty years of the century England can be said to have possessed any architecture at all, for no buildings of first-rate, and very few of even second-rate, importance were attempted. Inwood, however, with his exact Grecian copyism, as in the Church of St. Pancras, was destined to be followed by others who, like himself, studied Grecian architecture in Greece, and who, on their return home, erected dignified and well-proportioned buildings in the Grecian spirit—not many, but now and again one, preserving in this country for more than half the century an appreciation of the simple, the beautiful, and the refined, which might well otherwise have been lost. Such buildings were the British Museum, by Sir Robert Smirke; the Liverpool Athenæum, by Thomas Harrison; the Hanover Chapel in Regent-street, by C. R. Cockerell; and St. George's Hall at Liverpool, by H. L. Elmes—this last being one of the really great buildings of the century, perfect in its proportions and in the delicacy of its details, magnificent in its scale and perfectly satisfying to the most cultured taste. But if the Grecian school retained for England an appreciation of the choice and pure, the Roman school, capable of wider and more varied interpretation, was eventually to have the greater influence, merging as it insensibly did into a revival of pure Italian Renaissance. In this form it was responsible for the Travellers' and the Reform Clubs, by Sir Charles Barry; the Carlton Club, by Sir Robert Smirke; the Museum of Practical Geology and the west end of Somerset House, by Sir James Pennethorne; and St. Thomas's Hospital, by Henry Currey—all works of great importance and worthy of any architectural period in any country. These, it will be noted, are all Metropolitan buildings, and except in London and a few of the larger provincial cities, scarcely any examples of the style of any value are to be found. Some thirty years ago, indeed, it had to fight for its very existence in the now almost forgotten but then extremely virulent "Battle of the Styles," and its exponents, then mostly old men, were apparently vanquished by the more enthusiastic and younger votaries of Gothic work. The Gothic revival had commenced much earlier, and at that time seemed likely to become a permanent English style. Yet, like a hothouse plant, it withered with extreme rapidity after displaying a few flowers of great beauty; and it exists no longer. Originating out of the attention drawn to our churches by the "Oxford Movement," and from the necessity of repairing and enlarging the churches and cathedrals in architectural harmony with their original design, an immense impetus to the general employment of Gothic forms was given by their adoption in the Houses of Parliament by Sir Charles Barry, who had invaluable assistance from Pugin in the preparation of the designs. This truly magnificent building, a veritable "Wonder of the World," owes its greatness to other qualities much more than to that of style—to its marvellous grouping, its absolute suitability, and great originality. Its style, in fact, is mixed, the general lines of the river front being essentially those of a Renaissance building; and even the Gothic detail is not above reproach, if examined separately and considered as Gothic detail only, and not, as it should be, as the suitable and harmonious enrichment of one of the grandest buildings which the world possesses. The influence was first felt by directing the attention of the students of the day to the possibilities of Gothic architecture, and attained fruition when these students reached their practising manhood. Butterfield, Sir Gilbert Scott, Paley, Street, Burges, E. M. Barry, Pearson, Sir Arthur Blomfield, and Bodley are a few of the names most closely connected with the Gothic revival; but Pugin had preceded them all, and is now generally regarded as the "father" of the style. The "cross" in the courtyard of Charing Cross railway station may, though small, be taken as a typical example of his work, and in this regard well bears comparison with the larger but somewhat similar Albert Memorial by Sir Gilbert Scott. It is, however, somewhat invidious to single out any one of Sir Gilbert's Gothic works for mention more than the others, for if Pugin was the "father" of the revival, Scott was certainly its most prominent exponent, there being scarcely an English cathedral which he did not touch by way of restoration or some small addition, and hardly an ecclesiastical edifice in the country about which he was not in some way or other consulted. Of his original churches, the best known is St. Mary

Abbott's, at Kensington, but merely from the accident of its being in the Metropolis; for many are as rich and as perfectly proportioned, and, it may be added, as mechanically exact in detail. Irrespective of restorations, the other great ecclesiastical works of the period may be reduced to four; and though there are a really large number which are eminently satisfactory, these four stand out unrivalled, while each is very different from all the others. Christ Church, Westminster Bridge-road, the work of Alfred Bickerdike, who died recently in obscurity, is an example of perfect grouping and graceful detail, worthy of the best Mediaeval period; Cork Cathedral is instinct with the spirit of original conception and overflowing artistic inspiration of William Burges; Truro Cathedral is the refined result of careful study of English architecture of the 13th century, by J. L. Pearson; and Trinity Church, Chelsea, exhibits the strong individuality of J. D. Sedding, tempered by much sketching both at home and abroad. The public buildings erected during and in accordance with the Gothic revival were scarcely so numerous, and show by their general unsuitability that the style was a forced revival and not a true growth. Thus it is that, in spite of their great beauty, the word "unsuitable" has been used as sufficient to condemn alike the Manchester town-hall, by Alfred Waterhouse, and the Law Courts, by G. E. Street—though in the public mind the great architectural merits of this latter work have been greatly obscured by its acknowledged defects in plan, while amongst English architects the fact that it follows French rather than English tradition has frequently led to its being only half-understood. Both, however, are great buildings, and speak eloquently of an endeavour amongst the more cultured of our race to express their desire to have things graceful and beautiful around them. More generally acknowledged as a successful Gothic public building is St. Pancras Station, by Sir Gilbert Scott, with its somewhat formal lines well concealed by clever grouping and the use of graceful towers, and its special adaptability to modern requirements. So far as it is formal and suitable to a modern many-storied building, it has been followed in many a smaller building since, but in its higher attributes it stands alone. For private houses the "revival" has proved a failure, as it did for street architecture also, a notable exception being Mr. Astor's offices on the Thames Embankment, designed by Mr. Pearson. The Natural History Museum was erected by Alfred Waterhouse, about twenty years ago, in what seemed then to be the full height of the Gothic revival; and yet marked its coming sudden termination by the evident attempt, in a building of the first importance, to evolve something fresh. In spite of the deserved popularity of its author, the first of the great Gothic revivalists to willingly break away from the employment of Gothic forms alone, and almost the only one of those great men still living amongst us, this, his greatest work, has hardly received the recognition from his contemporaries which it deserves, and which will undoubtedly be bestowed upon it by posterity. Not many English buildings display so perfectly the quality of thoughtfulness based upon ample consideration of what is best in many other countries besides our own, and combined with extremely careful colouring. With the death of Sir Gilbert Scott in 1879, followed by the decease of Street and Burges in 1881, came the end of the energetic phase of the Gothic revival. During the whole strenuous period it had unconsciously been but preparing the ground for something else, while the Classic and Renaissance traditions which it had apparently overwhelmed had in reality been but slumbering, and now awoke with the contemporaneous erection of the Bolton Town Hall, by W. Hill; the Glasgow Municipal Offices, by William Young; and the Brompton Oratory, by Herbert Gribble. The first of these was, at its opening, commented upon by the *Times* as "an edifice, which for architectural beauty and internal arrangement and decoration is probably unrivalled by any building in the country which is devoted to municipal purposes," an opinion which, at any rate, received endorsement in the erection of replicas at Leeds and Portsmouth. Of the Oratory it need only be said that it is incomparably the finest Renaissance church erected in England since the days of Wren. The next architectural phase was a curious one—a rage for the quaint, induced by an over-study of the buildings in the low countries and the district of

the Loire, in the hope of developing a picturesque style of small dwelling, and contemporaneous with the "aesthetic" craze in art generally. It would occupy too much time to consider any except some works of magnitude to-night, else a good deal might be said of the highly satisfactory domestic architecture of the last twenty years under the leadership of Norman Shaw and Ernest George. But the influence of this domestic style was felt in larger buildings, the picturesque grouping and tiny detail suiting well the comparatively small Law Courts at Birmingham, by Aston Webb; the recently erected Municipal Buildings at Oxford, by H. T. Hare; and the English Opera House (now the Palace Theatre), by T. E. Colcutt; while it went far to detract from the nobility of the Imperial Institute. This tendency to littleness of detail was checked by the common-sense solidity of Norman Shaw's New Scotland Yard, still in a distinctly Belgian style (its evident prototype being the Mont de Piété at Liège), and by the reversion to a strong Italian Renaissance in the Accountants' Institute, by John Belcher. This last is the most notable building completed during the last decade in England or elsewhere, its fine proportions, its strength, and its bold originality, combined with the free use of the highest class of sculpture, raising it far above contemporary works. Its influence, too, appears likely to be considerable, if one may judge from the published designs for buildings which are not yet erected. Looking back over the century as a whole, one cannot help being struck both by the immense variety of first-rate building which has been done in England, and more by the steadily-increasing amount of good work which each decade has seen. During the early decades a few great buildings arose in London; but, generally speaking, architecture was a lost art. Now there are educated practitioners in every part of the country who are producing artistically satisfactory work largely in accordance with a prevailing fashion or style, while buildings of importance, hospitals, schools, town-halls, &c., are rising everywhere. The past has shown progress, and the prospect for the future is good.

THE ARCHITECTURE OF THE TWENTIETH CENTURY.

By BANISTER F. FLETCHER.*

(Continued from p. 222.)

GARDEN CITIES.

THE City Beautiful. Is there a city which might be called beautiful in the whole of Great Britain? Some approach beauty; but there are foul blots in most—slums, badly-constructed tenements, and insanitary factories—which spoil the picture. What can we say of the heavy pall of thick, black smoke which hangs over London, and to a much greater extent over the manufacturing towns of Northern Britain? Is that a subject of gratification to our municipalities, or a matter affecting the public health which should not be remedied? I believe I am right in saying that laws do exist which prohibit these monster belching chimneys from fouling God's air and blacking the earth, but that these laws, from local influences, are often not put in force. The open fireplace it will always be difficult to dispense with, owing to associations connected with the domestic hearth, but important improvements in its construction are already shadowed relating to smoke consumption which will no doubt be enforced on all householders. Personally, however, I am inclined to think that gas will supersede coal for warming the ordinary buildings. Let us glance at London—London the great, the picturesque, and far from ugly capital of the empire.

ROOF SPACES.

In the first quarter of the new century, when London, with the assistance of legislative action, may be expected to have shaken itself clear of its smoky curtain, and to have removed a large number of its most offensive factories to a convenient distance into the country, the question of overhead promenades formed upon flat roofs will probably be brought to the front, and found to be possible. The roof promenade may be a feature of the next century, and we shall perhaps return to the usage of the Egyptians and other Eastern

* Read Feb. 8, before the Birmingham Architectural Association.

peoples. These roof spaces, adequately protected, could be more generally utilised as playgrounds, flower gardens, tennis, and sports generally, or even as in Chicago to-day, as a space where shops could be erected. If imagination does not desert us, we might conceive a football match on such spaces with the attendant thousands of spectators. Such roof gardens will have this advantage: that in the summer, when fires are not needed for heating purposes, and when cooking will be effected by electricity, the air will be quite free from smoke, they will be more conveniently used. "Afternoon tea" on the roof will probably be the invitation of the future, and with the above suggestion a substitute would be found for a terrestrial garden. Public health would be benefited thereby, for the cool breezes generally obtainable at the height of a five-story house, with a view from the Highgate heights to the Surrey Hills, would be a blessing to the jaded office worker. I only mention this as showing the possible effect of Public Health problems on architecture, because the advantages of level roofs are admitted, and it is possible that when the way is cleared by a better atmosphere, the great cities, owing to value of land and increase of population, will wake to the advantages which they now miss, and a third London will appear on the house-tops, as there is already a second beneath the surface. Time will not allow of pursuing further the fascinating subject of the future city, for we must pass on.

DOMESTIC ARCHITECTURE.

In approaching domestic architecture one is met on all sides with so many "ifs" that the difficulty is to proceed at all. What is to be civilisation of the next century? Is it to be socialistic—the levelling of the rich—or is it to proceed on the lines of the present day? Will the people rush from the towns to the country, or vice versa? It is plain that the railway, the cycle, the electric tramway, and the new "flying machines" will quite as much and end to throw the people out of as into the great cities. It would certainly seem that with improved methods of communication there will be a tendency to live out of towns and work in them, for those at least who are able. It is considered now somewhat a feat to live at Brighton, with one's business in London; but we may take it that such a thing will be quite common, and that by the middle of the century a man may possibly go much longer distances. Domestic architecture will be governed very much by the course which easy transit develops, and such being the case, the health of the community will no doubt be improved by the placing of people over a wider area of ground. But, besides easy transit, telephonic communication, and the new science of writing by wire, known as the telautograph, will have an important effect on the distribution of population, and hence on the health of the community, and it is not unlikely that the trend of events will enable us to carry on our practices far from the madding crowd. As an instance, I call to mind how some years ago in the United States I visited a village ten miles from Boston, where the most celebrated landscape gardener in the United States lived, and where he worked with his assistants on his designs. Being in telephonic communication with Boston, and from thence with other centres of population, he and his staff had the advantage of being in direct communication with his clients, and at the same time of living in the country, with all the advantages of fresh air and congenial surroundings, an environment which we must admit is conducive to the production of the best work. Such is an ideal state for an architect, and it needs no great stretch of the imagination to conceive its possibility. But, even if we work in cities, it is certain that, with improved means of communication, the dwelling-house will be the better for being removed from the environs of the city. If there is one class of building which has improved in design and construction during the last fifty years it is the smaller houses of the suburbs and provinces. It is true that streets of houses are still erected in the suburbs by speculating builders, but it is possibly a hopeful sign of the times that, whereas formerly such houses had no pretence to being designed in a sanitary manner, yet now, in many instances, besides being so designed an endeavour is also made to give them a pleasing architectural exterior, which is of course very seldom successful, but still the attempt is encouraging. The drainage and sanitary fittings are now boldly

advertised and placarded, even to the great luxury of one bath with hot and cold water. Other alluring enticements are held out to the future occupier. In one house on the outskirts of London which I recently had occasion to visit, a plan of the drains, engraved in red lines on a brass plate, was prominently fixed to the wall by the kitchen dresser! It is needless to say that after such a display of careful sanitary forethought the house was immediately sold, and I give the suggestion to anybody with a house unlet on his hands as a prescription by means of which the desired result may be attained. It is, moreover, a hopeful sign of the times. Although long, unlovely streets of dwelling-houses are still erected, all cast in one mould, and people are obliged to live in them, there is a decided move towards a desire to live in a house with some character about it which shall differentiate it from its neighbours. Will this tendency increase and will such houses multiply, or will the desire die out? The discussion may possibly point the way. I must be permitted a few words on this important subject, because I really think it is connected with the idea of public health in its widest sense. A house which is to be a home should be made to suit the occupant in the same way as his clothes are, or should be made to fit him. A man should not, if he can help it, stuff himself into any house haphazard. The growth of individualism in taste is certainly manifest, and the greater interest taken in ordinary art matters by the coming generations will possibly not be lessened. But although the country dwelling-house will possibly increase to a considerable extent, yet there must always be a considerable number of dwellers in cities, and their lot in the garden cities already foreshadowed should be of comfortable character. Where will they live and how? The 20th-century "flat" will be a creation of its own, something to make the lonely bachelor of to-day sigh for. Everything will be able to be "turned on." I do not know how long we have been able to turn on water in our houses, but it must have been considered an immense advance in sanitary science, and must have done much towards the attainment of that personal cleanliness which has been considered by some experts to be next to godliness. Besides turning on water for washing, gas for heating, electricity for lighting, the liver in the flat will press a button for breakfast, lunch, or dinner, and somebody else will do the rest—i.e., supply it. By the pressure of another button the "babbling machines" described in "When the Sleeper Wakes," will be turned on, and will tell the worker while he eats his breakfast the morning news supplied from headquarters. People will be too busy to read newspapers in the coming days. The life in a flat will be socialistic, yet exclusive; for although the ménage will probably be undertaken by one person for the benefit of many, yet the result will be available privately. This life is already shadowed forth in the United States, and in London; but there seems no reason to doubt but that it will become very general among the class of people who will inhabit such buildings. The great domestic servant problem is going to account for a good many things in the coming century. Amongst others, we may expect the multiplication of fittings, such as lavatory basins with hot and cold water in each bedroom, the use of gas fires for heating, the more sanitary arrangement of servants' quarters. In how many houses of even fairly good size are there servants' bathrooms? Yet surely our successors will look back upon such a state of things with wonder!

THE WORKING CLASSES.

We used to hear often about "better days for the working people," and no doubt better days have come. The poor we always have with us; and by a similar method of observation so have we the working classes. The Rowton houses, the County Council lodging-houses, and the immense blocks of flats already erected in London are but the precursors of other big schemes which will certainly be pressed forward as population increases. This is perhaps one of the greatest public health problems we have to face. It is, moreover, so wrapped up in our commercial system that much will depend in the way that manufacturers regard it. Will the factories be removed to the country, or will they, to a large extent, remain in the towns? Personally, I am inclined to think that a large proportion will go to the country, and that only a few will, from their nature, probably remain in

the towns. Let us picture the country factory. The country factory with the cottages for the employes is an excellent idea, and one likely to give the best results to employer and employes. The employer will construct his factory on land comparatively cheap, and, by providing his workmen with house accommodation, also at a low rent, will have at his disposal a contented community, living largely in the fresh air; and, being under healthy conditions, will give better results than the town worker crowded into compartments necessarily small because of the value of city land. The growing families will also have the inestimable advantages of fresh air and country life. Some of the large manufacturers of the North have already tried this plan with good results, such as Messrs. Hartley, Lever, and Cadbury, and new villages, with the latest sanitary improvements both in the planning of the cottages and in the abundance of light and air and tasteful surroundings, have sprung up. If such schemes should prosper, we may look forward in the new century to a return of the people to the country from whence of late years there has been such an exodus, and the improved means of rapid communication already foreshadowed will assuredly assist in such a return.

PEOPLES' PALACES.

On the other hand, if the study of economics should compel the abolition of the present wasteful system of living, the multiplication of fires for warmth and cooking, the waste of service, the extravagance of buying food in small quantities, then it is possible that the erection of country palaces for the people—on socialistic principles—will be erected. Such palaces with proper equipment could supply all the needs of the community as to food, service, &c., at probably a quarter the cost of the individualistic cottage treatment. Each palace would be contained in its own park, with lakes, playing-grounds, &c. Such a building—a real peoples' palace, a 20th-century home-stead—may be beautiful, although in the minds of many not so picturesque as the simple thatched cottages of our forefathers. At any rate, the old dark and damp cottages of the present period, devoid of a proper water supply, will soon sink on their rotten foundations; the educated working classes of the future, who will know the evil effects of damp, will refuse to live in them, and they will be replaced by structures dry, well-planned and lighted, with proper water supply and drainage, and healthily constructed in all particulars. The old, picturesque "lichen-covered" thatched cottages, which we eagerly pounce on for our water-colour sketches, are, we may rest assured, more pleasant to sketch from the outside than they are to live in. Before returning to the town-dweller, we must spare a moment to discuss the scarcity of rural cottages which at present exists. It is a feature of this period; and the reason is that it is almost impossible to erect cottages which will pay a fair percentage on the outlay. That being so, it becomes a question whether some such scheme of communistic living as hinted above will not be the outcome of this state of things. I believe such scarcity is partly due to the present building regulations, which for this class of buildings are unnecessarily stringent. There is no reason why country cottages with proper brick foundations and dampcourses should not be built of wood in the upper part and make perfectly sanitary constructions, and it is the usual way of building even large country houses in the United States.

WORKERS IN TOWN.

But a large proportion of workers must always live in towns:—the needs of town life demand it. There is, however, a good deal to be said against these huge blocks of barrack-like buildings which have lately housed so many persons on a limited area, even if the sanitary arrangements are perfect. The absence of sunshine and fresh air is bad, not only for children, but also for older people, to whom the multitude of steps is specially objectionable. The absence of light and air in the lower floors of these huge blocks of flats is specially to be remarked.

MUNICIPAL BUILDINGS.

Let us look at a few types of structure which concern themselves somewhat less with the Public Health, and speculate in what way they are likely to be influenced by the progress of civilisation. The development of municipal architecture will depend, of course, on the view the masses take of their citizenship, and whether they will

regard the emulation of the architecture of rival towns as falling within the scope of citizenship. In the past ages such has been the case. From Hellenic period of Greek civilisation, from that Augustus through the Middle Ages, and in the great Renaissance movement of Italy in the 15th century, the emulation between rival cities has been the means of producing buildings of the first importance. In our own day the town-halls of Glasgow, Liverpool, Manchester, Oxford, Colchester, Sheffield, and other large towns have risen in evidence of this feeling, and as if to point the way to the importance of architecture as an exponent of the cities progress. The stately town, the emblem or visible sign of the harmonious life of the 20th-century citizen, will be the product of the moral forces, of which sanitary science is not the least important. Municipal buildings are worthy records of a city's greatness, and as the country population appear steadily drifting towards the towns, thus increasing their numbers and wealth, the new century may possibly be productive of this result. But whereas in the Middle Ages in England, the principal building rivalry often lay between cathedrals, in the 20th century it will probably be more of a secular rivalry between cities. As regards theatres, we may expect a great revival of building, which has, moreover, already commenced. The love of music and the drama is assuredly on the increase, and will continue to grow. The late John Addington Symonds, the distinguished critic on the Italian Renaissance, said that music was the only true modern art, the only art which seemed to appeal to the senses in a modern way. Certain it is that the public generally take a far greater interest in music than in architecture, painting, and sculpture. As municipalities expand and increase in wealth provincial theatres and concert-halls will rapidly increase. In this respect, the piecemeal decoration of the Royal Exchange in London is an example of how *not* to do it. Instead of the decoration of such an important building being competed for by the best fresco artists of the period, and the prizes awarded to the finest conception, isolated pictures are selected from time to time by eminent artists, the result being a want of continuity of scheme which is unfortunate in its results, instead of a whole series of frescoes forming a continuous picture of English, or, say, London history formed under one general, comprehensive sequence. There is, or should be, an intimate relation between architecture and national life.

THEATRES, GALLERIES, MUSEUMS, PUBLIC LIBRARIES, will become a *res publica* in every provincial town, and in many cases will form part of a group around the town hall, the building symbolic of the executive who will direct the formation of and undertake the custody of such collections. In London, the "city of cities," the division into separate municipalities, will, it may be hoped, engender a broader municipal spirit, so lacking under the old vestry system, and so lead to the erection of appropriate municipal structures worthy of the importance of each, as representing a city in itself. Public baths and wash-houses will be considered as necessary to every town or district as a system of drainage, and our grandchildren will look back with horror at the insanitary 19th century, in which, although sewers were continually priding themselves on the advance in sanitary science, local authorities were not compelled to provide facilities for the furtherance of public health. Properly constructed *abattoirs*, provided with the efficient sanitary precautions in the slaughter of animals for the purposes of food, will undoubtedly be entirely under municipal management, as in Paris and other large Continental cities. The most significant constructions of the new century will possibly be the monster towering hotels, of which London we have but seen the commencement. Such will be the expression of the touring, travelling, and luxurious 20th century; the age of big cities, art pilgrimages, and personally-conducted parties; the age of the sight-seer and the "looker-on," the age in which people will feast upon the memories of the past, live in the future, and exist in a way of contrast in the present. Asylums, police-stations, fire-stations, waterworks, electric works, tramway works, board schools, poor-houses, and hospitals, all of which are the outcome of our modern social condition will increase thousandfold. The greater the science of public health is studied and applied, the greater, however, the chance of the "weaklings" pulling down, and being a charge on the public purse.

The strain of living will increase the number of lunacy cases to an unparalleled extent, necessitating considerable additional hospital accommodation for neurotic diseases. People will talk of the good old days of the 19th century, and will fondly believe they would have been happier now than then, and perhaps they would be right. Within the region of purely Monumental Architecture can we expect much? Possibly not! The monuments of the 20th century will be ranked as works of utility. The great railway stations, properly planned for ingress, egress, and the health and comfort of the community, will take the place of the present cramped inclosures. When in, say, 1925, the "flying-machine" shall have been perfected, it may necessitate a reversion to the huge platforms some 50ft. in height, and several thousand square yards in area, in use in Babylonia 2,000 B.C., and on which the temples and palaces were placed. Such raised platforms will be required as resting-places for the 20th-century flying-machine, these elevated platforms being reached by lifts continuously moving. Such platforms will be constructed of steel, the best prototype I can give you being the half-finished Wembley Tower near London. In the great constructive science, the bridges of the future will probably be of astounding dimensions, and the new Brooklyn Bridge may be regarded as a forerunner of many which will far surpass it. To bridge from Calais to Dover, and even from London to New York, is a far from unlikely occurrence. And yet the thought comes, Shall we do without bridges?—shall we with the aid of "flying-machines" fly to New York, fly everywhere and anywhere? In such cases we may possibly require resting-places at stages in the Atlantic for the lubrication of the monster wings of the flying-machine, such resting-places taking the form of the monster steel platforms of the Wembley Tower type already mentioned. Am I romancing without reason? It may be so, and yet it is not possible for anyone to say these things will not happen. If we look at the strides in every science which have been made in the past century, we must feel that if the present is to proceed in a like ratio, not only the things I have sketched for you, but much more also, will come to pass.

A TWENTIETH-CENTURY ARCHITECT.

And if this is a correct view of the architecture of the coming century, what of the architects—of the creators of such work? If architecture in its outward forms has not advanced by any revolutionary stages along the highway of progress, yet in the manner of construction she has and will develop exceedingly. Old Philbert de L'Orme, an architect of the French Renaissance, once said that an architect should have four eyes, four ears, and three hands, and if it was necessary then, what now? An architect nowadays is necessarily skilled in mechanics, several sciences, and in various arts connected with architecture. Now architecture differs in one essential quality: that while the latter is a matter of commonsense, which everyone understands, and therefore can appreciate, the former in its highest stages is based on an appreciation of aesthetic quality, which the public can scarcely be expected to understand. The new century will be a utilitarian and scientific age essentially, and architects will have to adapt themselves more to the requirements of the time, and hold less to the antiquated ideals of the past centuries, if they are to capture and retain the public interest. We must be of the 20th century if we would succeed in it. Therein lies our great difficulty, prevalent in no other profession, for architecture is an art, science, and profession. In architecture we have the artistic requirements sadly hampered by the material needs, and above, dominating those, the professional qualifications requiring us, as men of business above all things, to protect our clients' interests. The question of architectural education, therefore, is an important one. The foundation of the Royal Institute of British Architects and the Architectural Association in this century, and the institution of professional examinations are merely the reflection of the spirit of the age, in which the public require to have some indication that the men they employ are capable, and, in fact, that they are qualified to practise their profession. This will undoubtedly lead to a compulsory registration for architects, when no one will be allowed to practise without a diploma. To the public it is a never-ending theme of amazement that anybody can call himself an architect. And

truly it is quaint. We cause the men we direct on our buildings to be registered. We have our registered plumbers, our carpenters, bricklayers, joiners, plasterers, and masons, who have all served their apprenticeship, besides being technically educated, and yet anybody can call himself and practise as an architect. Let us think for a moment of the power for good or evil in an architect's hands, due to his knowledge or ignorance in matters connected with building, and then who can doubt but that this compulsory registration is bound to come? Opposition has always been forthcoming in these matters. In the law, in surgery, and in medicine, the same well-worn statements have been flung back to those who have advocated progress, and generally this opposition comes from the older men, the relics of a past age, who can see no good in change of any kind. The only real difficulty is the question of the possibility of examining in art, and, as far as the public goes, it would not matter if art were left out of the question, for in nine cases out of ten the public employ us to protect their interests, and not to provide them with artistic work, about which they know little and care less. The principal thing to remember is that the public expect us to be thoroughly qualified all round, to be directors and experts of all departments of building, and to possess the business qualifications for guarding their interests, which are usually associated with the profession of the law. If a profession or calling which is employed by the public is to continue to exist, there must be confidence by the public; and how are the public to know with certainty the qualified from the unqualified, unless some official qualification is available? Again, a great part of the architect's ordinary practice consists in utilitarian work, which requires no artistic talent, but which does require great scientific and practical knowledge and business habits. We have elsewhere hinted that sanitation will be the guiding star of the next century, and in matters of drainage, and in everything connected with the hygiene of the house with which architects are concerned, and they will, no doubt, be properly registered to deal with such work. If persisted in, the present fine-art theory of architecture, held by a few eminent architects who have clients enough to support their fancy, will tend to the gradual absorption of legitimate architectural work by builders or big firms of decorators, who probably will employ a "tame" designer to put a frontal to their stock plans. In regard to the increasing complexity of our civilisation, the number, extent, and intricacy of new types of constructions, it may also be expected that the tendency to specialise will develop itself, although the general practitioner will, of course, continue to hold his place, as in other learned professions. Such are a few of the thoughts which I have been able to put together, dealing with the future of architecture, and although they are far short of what I had hoped to produce, yet, in the time at my disposal, I have found it impossible to go more deeply into the subject, but hope that I may, at least, have made suggestions upon which a discussion may be profitable.

"BUILDING NEWS" DESIGNING CLUB.

A MOUNTAIN CHURCH.

A CONSIDERABLE variety of ideas has been displayed by the competitors for this subject, but the neglect of personal study of Mediaeval work, now somewhat out of fashion among students as well as their masters, is illustrated by far the larger number of the designs submitted. Several of the plans evince, too, a want of knowledge of church ritual, and their authors fail to appreciate the requirements of modern congregations among whom the idea of worship constitutes the leading idea of the service. The conditions reprinted below sufficiently indicate the leading points to be observed. These have in many instances been neglected, however, though in determining the merits of a church plan it is obvious that the suitability of its respective parts must be considered from a Churchman's standpoint; besides which, it is necessary in selecting the details of the arrangements for a mountain-side church, to discriminate as to their adaptability to the special conditions under which the services in the ordinary way must be conducted. Provisions which would be suitable for the working of a town church are not exactly what are required in an outlying parish, where simplicity of parts is more in keeping with the possibilities

of the prevailing conditions. At the same time the governing principle must be the same, of course, in the main in either case, seeing that the service of the church finds its central object round about the sanctuary of the altar. A church is not a preaching place any more than it is a mere auditorium or concert-room, and while ecclesiastical precedent in an historic church must obtain recognition in determining the architectural style, there need be no rigid limitations exactly restricting the architect to Mediaeval precision. A church, however, ought to bespeak its object, even to the ordinary passer-by, and the designer, to be successful, should avoid the possibility of a church being mistaken for a school, village hall, or a meeting-house.

Whatever may be the shortcomings of the three designs which we herewith illustrate to-day, neither of them is open to this particular objection, and if we should have preferred a more simple and elementary form of building for the mountain side than either of these schemes display, we think that their sturdy towers would not look out of place among the highlands of the West-country hills. The following particulars were issued to the competitors:—"A mountain-side church on a site sloping towards the west at the incline of one in ten in that direction. The road is 30ft. away from the site of the actual building, and is located on the south of it. The building is to have a western tower or belfry for three bells. The nave is to seat two hundred worshippers, with a central aisle 6ft. wide. The font is to be in the S.W. corner of the church. There is to be a good S.W. porch and room for ringers under tower, nave level. The vestry is to be on the S. of chancel and an organ space on the north side of chancel high enough to not box in the sound of the instrument, and there is to be a return way for the communicants. The chancel to have two return stalls and a dwarf stone screen, with rood-beam over. The altar is to be seven steps of 6in. above the nave. One of these steps at the chancel entrance. There are to be choir seats for eight men and ten boys. The pulpit is to be on the N. side of chancel arch on the nave. No lectern is necessary, as the Lessons will be read from the return stalls in chancel. At the outside of the west-end, under the church, put a shelter for pedestrians going over the hill in bad weather, or for mourners waiting for funerals. The space may be the width of the nave and about 15ft. deep, 8ft. head room, and have a paved forecourt, say, 10ft. deep outside the church wall. Dressed stone to be used, with rubble regular coursed walling. Roof covered with stone slates. Style 14th-century Gothic, of plain, sturdy picturesque treatment. Heating place under organ-chamber. Scale 8ft. to inch. The size of the church to be fixed by the accommodation asked for, and space is not to be cramped. The roof inside may be an open-timbered one, or have a ribbed segmental vault decorated in bold stucco ornamentation with a cornice. The exposed position of the church must be recognised in the detail and construction. Size of drawing to be 24in. by 18in., including a perspective sketch. The drawings to be sent in not later than Saturday, January 5."

We place "Auntie Macasser" first, "Embryo" second, and "Gillus" third, and these three are the best out of the forty-five designs submitted. "Auntie Macasser" has realised our intentions and the conditions of a church plan more satisfactorily than any of the others, though in some respects a few of the unsuccessful schemes had more suitable exteriors for the site; by which we mean that they avoided so many breaks and omitted florid tracery in the windows, depending more on a breadth of treatment of roof, slopes, and picturesque outline. In their plan or other essential details, however, faults had to be taken into account. The porch in the first design well screens the nave from draught, and the long line of roof above is a commendable way of treating it externally in lieu of a gable, the steps sufficiently emphasising it as the chief doorway. The vestry door is perhaps a little too much in evidence, but it has the advantage of enabling the vestry to be reached without going into the church, and also gives a second exit in emergencies. The objection is that this extra external door in the church is likely to produce a draught, and its position is out of place, in full view of the congregation. The return stalls in the choir ought to have been fixed close to the screen, so as to avoid a space between them as drawn. The return passage for communicants is very good, and, for a small

organ, such as would be sufficient for such a church, there may be enough height, though none too ample a space for sound. The preacher would have been more in view of the aisle people had the pulpit been in a direct line with the arcade. The font might have been set further westward, and so given a little more space in front. No one should stand behind the priest during a baptism. The screen to the ringers' space under the tower has its advantages, doubtless; but one objection is that the inclosed part often becomes little more than a glory-hole. The church outside is rather good, subject to what has already been said, and the tower is dignified and simple.

"Embryo" is less ambitious. His west front is commonplace, however. The closed-in shelter partakes too much of a parish room. The plan is suitable, and has very good points. The return stalls asked for are left out. The sacarium is spacious and dignified, but the sedilia are hardly needed, particularly in duplicate on the north side. The organ looks boxed in, but the extra entrance at that point would be a convenience. The third design, by "Gillus," like the last named, has no perspective view, which is not according to the instructions. Its detail, more particularly the cusped window-work, is not nicely proportioned, and the plain, lintel-headed lights to the sanctuary are crude and ugly. The interior would be insufficiently lighted with no east window. We suppose one is intended high up, but it is not drawn. The plan is ill-considered, and not studied in detail. The return seats on the north side would be hidden behind the pulpit. No provision is made for the seat of the organist behind the choir, and the Communion rails are too far from the altar, particularly in a church like this, where the celebrant would mostly be single-handed. The circular stairway to the choir vestry would be inconvenient, and the lower vestry would be entirely, or almost entirely, underground. The w.c., between the priest's vestry and the church, is a doubtful arrangement, awkwardly placed, facing the entrance doorway.

"Rush" has nearly scored a success with his one continuous ridge and plain handling of the subject, but the tower is inconsequential. The west window appears too squat and small, and the aisle lights are encumbered with poor tracery. His plan has merit, and would make a fairly good church, but the author fails where he ought to have succeeded. "Blom" is too ambitious; but his big square tower is a mastering feature, and his plan shows some degree of originality in the arcaded treatment of the chancel entrance, in order to obtain which the church is widened out, giving space on the north for the organ, and on the south to a corresponding width to balance the effect, and furnish a return way for communicants. This contrivance is expensive, and, moreover, it is not by any means likely that the internal slopes of these quasi-transept roofs would come well against the wall above the cross arcade, forming a sort of triangular pocket and an ugly hip where the mitre with the nave roof occurs. The raking buttresses to the shelter are not happy in appearance, and the shelter extends outside beyond the west front, forming a meaningless terrace. Other sloping buttresses, like shores to the facade of the church, give an unhappy effect. "Blom" is more familiar with Gothic detail than most of the competitors, but his hipped vestry makes too big a part of the building to be roofed in this way, and is out of scale in consequence.

"Robin Hood" ornaments a big tower with bay projections which look strange and meaningless; but the effect is original, the whole being capped by a conical spire. The nave dormers would intensify the sprawling proportions inside. The vestries are divided, one on the north, the other on the south. "Jove's" church is needlessly big. The belfry stage of south-west tower is treated after the manner of canted bays by recessing the walls, and in this way angle piers are obtained. The short transepts do not improve the plan, and internally would be mere recesses. The vestries are too small, and the ringers' box in the corner of the porch is objectionable. "Primus" is odd with a clean-cut sort of church, having massive piers at the angles of his tower which forms part of the nave. The priests' stalls are odd triangular pews, placed like cantors' seats, and the return way past the little vestry shows that "Primus" has not realised the requirements sufficiently. "Pierrot" is neat, and sends a good view; but his design is too Flamboyant and expensive with large traceried windows and ungainly-shaped openings in the aisles and tower belfry. His transepts

make the nave proper very short, and we regret not being able to place him higher in the list. "Dan" is a capable contributor, and his plan is rather good, with one long ridge line from end to end of the church, but the ambitious tower, clever as it is in some ways, we do not like or approve. The west front is hardly simple enough, and is wanting in scale and dignity. "Dan's" ability is, in this case, misdirected. "Sundial," another competitor who also fails, though for different reasons. He could hardly have conceived a more unlikely design, not that this is to be condemned, for we are only too glad to welcome any degree of originality; but it is indispensable there should be some obvious reason for so marked a departure from recognised methods. Treated with more sense of form, "Sundial's" church would have deserved a much higher place. As it is, the belfry and aisle windows would spoil any design, and the porch is very poor. "Pat McKann" sends a very Irish-looking building, with square-headed windows and a bold squat tower, unrelieved by grace of detail, though its west side is somewhat clever. The gangway on the south of the nave is needless. The return passage for the communicants should have been in the chancel, not in the nave. "Vigornia" is very neat. It is not clear how the roofing would look in the nave on account of the ugly hips to the transepts. A very florid screen without the rood is shown to the choir, and the outside shelter appears to extend under the whole of the nave. "Brush" draws boldly, and with some dash, but the design is not a success. The plan is fair, but there is a want of "go" in the design which ignores the relative proportion of solids and voids. The wheel window and the tower are commonplace. "Quercus" sends a church which would work out in execution better than his sketch suggests. The west end is rather good externally, but it is very poor on plan. The east window is not nice. "Quadrant" tries to get away from the beaten track, for which he is commended; but the attempt is not quite so successful as he intended. The tower top with its overshadowing eaves is scarcely effective, and the tracery of the windows is ungainly and strange, and not beautiful. "Harland" is painstaking; but we fear his design would look bald if built, in spite of his care. The plan is at best very ordinary. However, he is refined. "Alphonse" gables his tower, and roofs it with an octagonal spire, rising above the square parapet. Narrow aisles are used for passages, but the detail of the design is wanting in freshness of style; the arch of the chancel, for example, is depressingly poor. "The Tramp" ought to do better; but he will not improve till he takes more care both with his drawings and in the initial scheme of his designs. The tower top is level with the apex of the west-end gable—an unpardonable fault. "St. Giles" has so many good points that we much regret his defects. The square, bold, simple tower, the west front, the two lofty simply traceried windows of the nave, the exterior of the vestry are all well designed, particularly the west front. The ramped walls next the shelter arches would be better omitted. The traceried opening in the ringers' room of the tower is shockingly bad, looking like a piece of perforated tin. The roof of the tower is designed so that the water must run over the parapet, as there is no room in the central parts of either face for any gutter. The tower porch is wastefully big, and the ringers' space is a mistake contrived out of it on one side. The plan is badly arranged, and the organ is thrust in a chamber in a most objectionable fashion. "St. Giles" is, in fact, most unequal. "Wisthe" appears to have studied Scotch churchwork. He avoids the conventional, but draws very indifferently, and has little notion of church needs. We wish he had worked out his notions better, and had displayed some sense of fitness. The odd tower, the narrow nave front with the Flamboyant west window, and the porch flanking this front combine quaintly, but they clash in scale, and result in a jumble. The plastered ceiling in the church is after the idea we suggested; but how it continues into the choir is not clear. The men and women's closets to the shelter underneath would have to be closed as a public nuisance on the hill side. "Maori" is more orthodox, and we have little to find fault with in his west façade of the tower, save that its belfry lights are too big. He has tried to be simple; but has failed to follow the directions given as to plan. His vestry window-sill runs into the ground, and the sanctuary floor is much below the churchyard level. "Gow Cron" does not draw badly, though his view is

BUILDING NEWS DESIGNING CLUB.

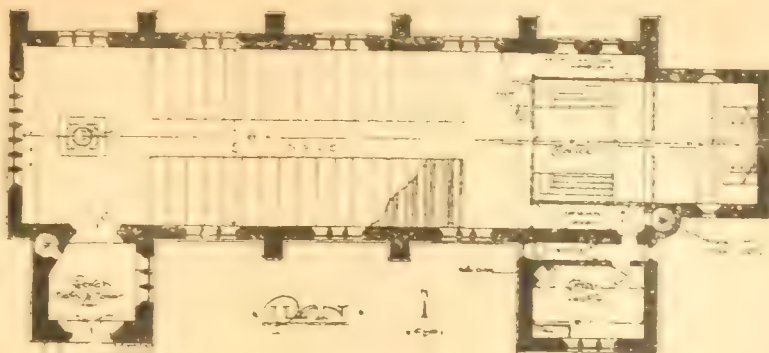
A MOUNTAIN SIDE CHURCH.

BY GILLUS.

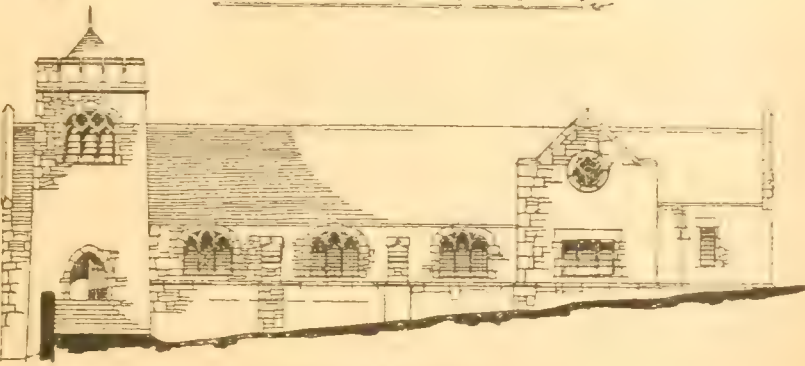


SECTION.

PLACE THIRD.



WEST ELEVATION.



SOUTH ELEVATION.

poor. If his ideas are not fettered by precedent, his departures lead to no improvements. The transepts are a mistake. The wasteful passage between the vestry and chancel is another, and the choir-seats are all wrong, and so is the proportion of things in the sanctuary, where there would be hardly head-room. "Mate's" sense of suitability is wanting. Externally, the effect is piled up. Internally, the result would be squat. The side aisles are merely wasteful passage-ways. The organ right at the back of the pulpit is a novelty without any advantage, except that an extra opening is made into the organ-chamber. The treatment is too florid. The canted-in arrangement of the nave towards the chancel arch, originated in modern use by the late G. E. Street, R.A., is a good one when well worked out. "Mate" manages it badly. "Le Comte" is sturdy, and odd even to baldness—a characteristic with which we find no fault, though his squat tower is unworthy of commendation. The detail is so poor and thin, in spite of the massive forms inclosing it. The interior is unattractive and forbidding. Few would trudge up a mountain to sit in such a barn. "Caley" displays an entire want of knowledge of church requirements, and but a sparse acquaintance with Gothic architecture. He must not use tracing paper again. "Number 15" draws neatly, and his elevations are not so bad, but they are tame. We cannot commend his plan, and have not space to go into its details, which want recasting. "1901" is the motto for a design which in perspective belongs more to A.D. "1850." The south side is the best part of the scheme, and the plan perhaps is the worst. "Alpha" sends a double-aisled church with apsidal ends to the chancel and vestry, and an apsed recess for font. The priest's stall is an old-fashioned pew, with L-shaped seat and desks facing west and south—a curious idea for a return stall as specified. The drawings are neat and carefully worked out; but the architecture is not very happy, especially the tower. Another careful contribution is that by "Capital de Buch," with "Decorated" windows, that to the vestry being arched and lofty, large enough for the chancel. The western tower is "fair and square" and inoffensive. "Corinium" spoils his design by poverty-stricken drawings, showing the view as if the tower was intended to be erected in metal plates. If drawn properly, this proposal would have stood a better chance. "Smugmugh" delineates with some spirit, but in a coarse, rough style, which renders his design but indifferently. The church would look best from the west end,

where there is a fairly well-designed tower, which might have been improved by the omission of the big traceried window. As the stair turret space is devoted to a safe, no room is left to get up the belfry. The apse to the chancel is ugly and thin and low. "Scottie" gives us a building filled with large windows of Geometric tracery, lofty in scale and imposing in type. The vestries have a w.c. each, but are not much larger than mere closets themselves, measuring 10ft. by 6ft. each. Fancy a choir in a room of that size! The tower is over 70ft. high. "Pencil Point" draws in ungarnished outline, showing no jointings save to the chancel arch, which resembles the bay of a railway bridge. The author has done wisely in adhering to a plain and simple skyline; but the effect is that of a rubble-built fabric covered with roughcast, in which case it probably would look uncommon. The oddly-proportioned and parapeted tower has a pencil-shaped spire—a feature which is left out in the perspective. "Apex" comes next, then "Meta," followed by "Lime Stone," who works on acknowledged lines with neatness and care. His church would be spacious, though it does not realise our intentions. "Pre-Raphaelite" hardly justifies such a motto. "Ecclier" draws in such a "flick-and-dot" style that we hardly know where we are; but so far as we can make out, the result would be very strange as seen from the west. "Perseverance" enters his building from the north, and has taken no little pains, adopting a style belonging to the Congregational chapel school of Gothic work. "Perseverance" sends a double-arcaded church of a rich florid type, worked out elaborately, with some regard to correctness of precedent; but his perspective is a poor performance. The lych-gate is entirely out of drawing. "Bumpkin" has a circular tower rising out of the square. "Gargoyle," "Ruthra," and "There's 'Air" complete the series. We have no doubt that we have chosen the best for the two first places; but some of the other designs run the third man very hard in points of merit. The competition, on the whole, has been seriously gone into, and reflects credit on the competitors.

THE STONE OF THE TWENTIETH CENTURY.

WE have received the illustrated catalogue entitled "The Stone of the Twentieth Century," giving particulars and illustrations of the quarries and works and buildings of Messrs. J. Hodson and Son, quarry owners and stone

merchants, Nottingham, who have their London depot at 15, Cross-road (Midland Railway), St. Pancras Goods, N.W. This firm are sole agents for Killer Bros.' Hopton-Wood stone, which has been used for many years in some of the most important buildings in the country. The quarries yield three qualities—the White Bed, Grey Bed, and Dark Bed; the white quality being used for monumental work, the grey bed for best finished and polished work, while the dark bed is the hardest, and is largely used for general masonry where a hard, durable, and impervious stone is necessary. We may state that the crushing stress, as tested by Messrs. Kirkaldy, is 810 tons per cubic foot.

This hard and durable stone, through cost of production, has not been brought into general use. New methods have much reduced the cost of labour, so that the hardest beds can now be used for steps, landings, pavings, hearths, copings, templates, and bases for columns and stanchions. Messrs. Hodson and Son can supply this stone worked ready for fixing or fixed complete; but stone in block or sawn to size is probably the preferable mode of supply. The photo. illustrations of Messrs. Hodson and Son's Castle Meadow-road works give some idea of their large steam sawing, turning, and masonry works, the Hopton-Wood quarries, and views of several buildings in which this stone has been used. These include the Royal Derbyshire Infirmary, where the steps and staircases are of Hopton Wood stone, executed by Messrs. Hodson; the Victoria Station, Nottingham, on the Great Central and G.N. railways, supplied by this firm with Darley Dale stone from the quarries of the Darley Dale and District Stone Co., Ltd., which are also illustrated; County Council Hall, Derby, executed by the firm, the stone being Killers' Hopton-Wood stone; and several other buildings in Nottingham, &c. Messrs. Hodson and Son execute every description of masonry and turning, and are agents for and supply all the best building stones.

The congregation of the Unitarian Church in Aberdeen have resolved to proceed with the erection of a new building at an estimated expenditure of £5,000. The site is in Skene-street, on the property known as "The Galleries."

Mr. J. Balli, of London and St. Leonards, has presented to the Borough of Hastings a bust of the Queen. It was executed in Parian marble by Mr. John Durham, R.A., in 1880. Mounted on a pedestal, it is about 5ft. in height. It has been placed in the Hastings Town-hall.

CLASSIC WROUGHT-IRON WORK.

MR. T. S. ELGOOD delivered a lecture the other evening before the members of the Leeds and Yorkshire Architectural Society, in the Park-street Rooms, Leeds, on the subject of "Wrought-Iron Work of the Classic Period." The lecturer dealt severally with national types. The Italian style of the Renaissance, he pointed out, was not of a very definite character, and this was hardly surprising, in view of the extraordinary freedom and exuberance of Italian architecture and decorative art of the period. It was characterised to some extent by an absence of welding. Spanish wrought-iron work, as manifested on various famous cathedral screens, was of the noblest order. It was marked by an effective combination of blacksmith's and locksmith's work. The German smiths amused themselves at the Renaissance by indulgence in "puzzle pictures" of grille work. Germany, however, never lost the handicraft of smithing as an art, while the German locksmiths and armourers were among the best in the world. France had done little at the Renaissance; but her locksmiths were skilful, and a Strozzi key belonging to one of the apartments of Henry III. was sold a few years ago for upwards of £1,000. The Baroque or Jesuit style, generally associated with the name of Louis XIV., formed one of the noblest types of ironwork that could be adduced. England had twice lost the traditions of smithing as an art: but in the time of the Stuarts a remarkably effective type, known as the Queen Anne style, had been produced. This style had the merit of providing the best of effect for any given cost; in other words, it was economical and good, and deserved to rank with the Spanish and French Baroque styles as among the finest extant. The lecture was illustrated by a large number of specially-prepared lantern-slides.

An inquiry was held at the Guildhall, Stafford, on Thursday in last week, before Col. W. Langton Coke, M.Inst.C.E., into the town council's application to the Local Government Board for approval of the appropriation of certain land situated on the north side of the Crooked Bridge-road as a site for the erection of working-class dwellings, and for sanction to borrow £6,500 for the erection of such dwellings.

In the choir of Salisbury Cathedral, in front of the altar, the Earl of Pembroke and Montgomery has placed two brasses in memory of the various members of his family buried in the cathedral, but of whom there has been no memorial. The designs were approved by the late architect of the cathedral, Sir Arthur Blomfield, A.R.A., and also by the present, Mr. C. J. Blomfield. The ambry in the morning chapel has been restored by the Rev. C. N. Wyld, in remembrance of his long residence in Salisbury. Extensive repairs and improvements to the organ have been carried out by Messrs. Willis at a cost of £1,000.

A new Roman Catholic Church is to be erected in Ocean-street, Camel's Head, Devonport, to seat about 1,000 people. In addition to the church, a presbytery and schools are to be erected immediately adjoining. The contract for the church has been given to Messrs. T. Jenkin and Son, contractors, Marlborough Works, Devonport, the price being £3,000. The work is being proceeded with all despatch. The church will be erected in the Gothic style, limestone with Ham Hill stone dressings being used. The seating will be by open benches. The church, presbytery, and schools will cover about 20,000ft. of land.

Mr. John Ruskin's prolonged associations with Herne Hill have been commemorated by the unveiling in the church of St. Paul of a memorial tablet, having a height of 5ft. and a breadth of 2ft. 4in. which has been placed on the north wall of the church. Bearing in mind that Mr. Ruskin was the author of "The Stones of Venice," an effort has been made to construct the tablet of, as far as possible, marbles that would recall the charms of the city to which he was so devoted. The unveiling of the memorial was performed on Friday by Mr. Holman Hunt.

The Fishery Board for Scotland have offered to the Harbour Commissioners a grant of £5,000 towards the construction of a harbour at Portessie.

The Cannock Rural District Council have adopted plans by Mr. W. E. Rogers, C.E., of Rugeley, for laying on water mains for the supply of the parish of Great Wyrley from the South Staffordshire water mains. Mr. Rogers has been appointed engineer to carry out the work on the following terms—viz., £20 for preliminary work and 3 per cent on the outlay. The clerk has been instructed to submit the plans and estimate, amounting to £3,500, for the approval of the Local Government Board.

OBITUARY.

The death is announced from Bombay of RAO SAHIB SITARAM KHANDERAO VAIDYA, of that city, who had been a member of the Society of Architects for ten years, having been elected in 1891.

CHIPS.

The Roman Catholic Church of St. Mary, Moorfields, which is now being demolished, is to be succeeded by a smaller building erected quite close to the site of the old—in Eldon-street. New schools and a chapel will also be built in Banhill-row. The funds for all purposes will be forthcoming out of the purchase money—£202,000—for the site of St. Mary, Moorfields. The balance has been allocated towards the building fund of the new cathedral in Westminster.

On Saturday a new Roman Catholic school and chapel was opened at Witton Park. The building, which is faced with red bricks, has been erected at a cost of about £1,400. Mr. Graydon, Durham, was the architect, and Mr. Scott, Barnard Castle, the builder.

At Grangemouth, N.B., a new Young Men's Christian Association Institute, in Abbotts-road, has been formally opened by Sir J. N. Cuthbertson. The building has cost about £5,000.

A Local Government Board inquiry was held last week in the Court Buildings, South Shields, before Mr. H. H. Law, M.Inst.C.E., relative to the memorial presented by the South Shields Corporation, praying for an extension of the borough boundaries to include the parish of Harton.

The porch of Thornage Church, Norfolk, has been restored and re-roofed at the cost of Sir Alfred Jodrell. The work was carried out by Mr. T. H. Blyth, of Foulsham.

The Bradford Board of Guardians have instructed Mr. J. H. Morton, of South Shields, to prepare plans for the enlargement of the workhouse nurses' home.

At the annual meeting of the Royal Cambrian Academy, held at Plas Mawr, Conway, the following Associates were elected:—Mr. Lancel Edwards, of Conway; Mr. Shirley Slocombe, of London; and Mr. Richard Gay, of Bettws-y-Coed. The president, Mr. H. Clarence White; the vice-president, Mr. C. C. Grundy; the treasurer, Mr. J. Finnie; and the secretary, Mr. J. W. Slater, were re-elected to their respective offices for the ensuing year. It was decided to open the next annual exhibition on May 27, and to continue it until September 28. Receiving days were fixed for May 3 and 4.

The town council of Tenby have resolved to apply to the Local Government Board for sanction to a loan of £15,400 for the execution of Mr. James Mansergh's water-supply scheme.

The City Council of Hereford have resolved to offer the Young Women's Christian Association the sum of £2,550 for their property in connection with the new municipal building scheme.

The new United Free Church at Crailing, near Jedburgh, was recently opened with a dedication service. The building has been designed after the manner of 13th-century work. The church is built with red freestone, and covered with green American slates. There are a hall, vestry, and other accommodation. The seating is in pitch-pine, and the pulpit is executed in oak.

A carved oak lectern, provided by public subscription, has been placed in the parish church of Corby, South Lincolnshire, to perpetuate the memory of the late vicar, the Rev. Charles Farebrother, who held the living for fifty years.

A memorial stained-glass window, erected by Dowager Lady Neeld, in memory of her son, Sir A. W. Neeld, has been dedicated by the Bishop of Bristol, at Grittleton Church, Wiltshire.

The Archbishop of Canterbury will, during the third week in June, lay the corner-stone of the Walsingham How Memorial at Wakefield. The works in progress include the reconstruction on an enlarged scale of the eastern portion of the 15th-century parish church, now the cathedral. The plans were prepared by the late Mr. J. L. Pearson, R.A., and are being carried out under the supervision of his son, Mr. Frank L. Pearson.

An appeal for funds towards the restoration of the collegiate church of St. Saviour, Southwark—the cathedral-designate of the future diocese—as well as towards the cost of erecting a collegiate house, has been circulated. For the former purpose a sum of £6,000 is urgently required. Three hundred pounds of this is for the repair of the tower, and other exterior and interior work is equally needed. For the purchase of a site and the erection of a choir-vestry the sum of £3,000 is required. At present the choir have to vest and keep their robes in one of the side chapels. The sum of £4,000 will be required for the erection of the collegiate house.

Building Intelligence.

ANDERSON AND SALTCOATS JOINT HOSPITAL.—A fever hospital has been opened at Springfield. The buildings are four in number, and are designed to accommodate nominally 14 patients with the necessary staff. In the event of an epidemic, however, this number may be doubled without unduly crowding the wards. The administrative block provides accommodation for a matron, four nurses, and two servants, and has kitchen offices of sufficient size to do the culinary work for the whole establishment. The ward block is divided into three sections, thus allowing for the treatment of three distinct infectious diseases. Each set of wards has its own nurse's duty-room, bath-room, &c., and is entirely disconnected. The wards are well ventilated, and heated by hot-water radiators in addition to the fireplaces. The laundry and discharge block contains a well-lighted washhouse and laundry, with drying-room attached, boiler-house, mortuary and visitors' room, ambulance-house and disinfecting rooms. Connected to this building are the rooms where the patients are discharged, being bathed and supplied with clean clothing before leaving the premises, thus guarding against the carrying away of infection. The porter's lodge, which is situated at the gates, is a compact little cottage, and controls the access to the grounds. The whole work has been carried out from the designs and under the direction of Messrs. Fryers and Penman, architects, Largs. Mr. James Potter, Largs, was the clerk of works.

NORWICH.—The new Technical Institute in St. George's was opened on Wednesday week. The building, which has a frontage of 190ft. to the river and of 120ft. to St. George's Bridge-street, consists of basement, ground floor, and first and second floors. It is on plan L-shaped, the river or north side being parallel with the shaft of the letter. It is of local bricks throughout, with Cossey brick mouldings and dressings, and stonework to the portico. The second floor is devoted to art. Parallel with the river is an elementary-room, a life-room, and a room 25ft. by 90ft., capable of sub-division. The whole of the rooms are supplied with Tonks's patent fittings, by which casts, pictures, drawings, &c., can be suspended from the walls. Facing St. George's there are a modelling and casting-room and a design-room, fitted up with lecture table and students' tables, and also with a white board for design purposes. The electric mains are laid in this room, so that an electric lantern can be used for demonstration purposes. On this floor is also an art master's room, and a room for the assistant art teacher. The first floor is devoted to science. Parallel with the river there is a balance-room adjoining the chemical laboratory, which is 54ft. by 24ft., a preparation-room, smaller classroom, photographic-room, &c. There are also a large lecture-hall, devoted to experimental physics, and a drawing office. On the ground floor is the general entrance. To the right is a general office; to the left is the entrance to the principal's room, which opens into a committee-room 24ft. by 38ft. On this floor there is a students' common room, and two rooms to be devoted to boot and shoe work, each measuring 24ft. by 54ft. In the basement there is a students' common room, and next to this a space of 24ft. by 54ft., devoted to the heating and ventilating arrangements, which have been carried out under the direction of Mr. Arthur E. Collins, the city engineer, who is the architect, by Blackman's, of London. Facing St. George's there is a plumbing workshop, 24ft. by 49ft., and a dynamo shop, 24ft. by 41ft.

SHAFESBURY AVENUE, W.C.—The Apollo Theatre, adjoining the Lyric, in Shaftesbury Avenue was opened on Saturday night. Designed by Mr. Lewin Sharp, it is French Renaissance in style, and is planned so as to give everyone in the auditorium an uninterrupted view of the stage. This is secured partly by the absence of pillars, partly by the fact that the stage slopes less and the various floors of the auditorium much more than is usual. The "rake" of stalls and pit is continuous from front to back. The pit seats are upholstered in the same manner as the stalls, and are all made to lift up so as to give room to pass, the house thus being given a harmonious uniform appearance. The seating capacity is for 1,200 people. The decoration of the box-fronts and circles is in white and gold. The walls are of a deep crimson, the seats and hangings red of a lighter shade, and on every seat is worked a lion

and lizard device, which has been adopted as the theatre's crest. The act-drop is after Watteau, to be in keeping with the Louis Quinze scheme of ornament. Each separate part of the house has a separate promenade and foyer. The arrangements behind the curtain include many novelties in the way of labour-saving and time-saving machinery. The lighting is entirely by electricity. Even the orchestra is upon an improved plan, contrived somewhat after the Bayreuth system.

SOUTHAMPTON.—The borough engineer, Mr. W. B. G. Bennett, has reported to the housing committee of the corporation with regard to the development of the recently-cleared unhealthy area north of Simnel-street. Mr. Bennett was instructed to ascertain if 600 persons could be housed in blocks of buildings similar to the artisans' dwellings. He states that, taking as a data the number of persons which the Local Government Board will permit to be housed in such buildings, he found on this area it was possible to house 536 people, and this number would require four blocks of buildings, five stories in height, at a probable cost of £12,000. He had also further considered what could be done in laying out the area in rows of cottages with 12ft. to 15ft. frontages, two stories in height, and found that 75 could be erected at an approximate cost of £180 to £200 each, thus providing accommodation for 375 persons. The cottages contain living-room, kitchen, scullery, coals, and w.c., and three bedrooms, which was very much more convenient than blocks. The committee decided to instruct the borough engineer to complete the plans of both schemes, and bring up a further report.

CHIPS.

Colonel A. J. Hepper, D.S.O., R.E., Government Inspector, held an inquiry on Friday at the Public Hall, Rhosllanerchrugog, with reference to an application made by the Wrexham Rural District Council for a loan of £2,500 required for purposes of enlarging the Rhos sewage outfall. Mr. Price Evans, engineer to the council, gave evidence in support of the scheme.

It has been decided to face the new public library for New York, to be built from the designs of Messrs. Carrere and Hastings, of that city, with marble instead of sandstone, as originally proposed. The New York Board of Estimates have accordingly authorised an expenditure equivalent to £570,000 on the proposed building.

Canon Rice formally dedicated last week a baptistery which has been constructed in Holy Trinity Church, Windsor, as a memorial of the Rev. Arthur Robins, formerly rector of the parish. The chamber, which is Gothic in style, and is situated at the south-west end of the church, has open carved oak windows on its east side. The font stands in the middle of the tessellated pavement, and around the upper part of the walls is an inscription.

The Godalming Town Council have decided to preserve the interesting old building which stands in the centre of High-street, Godalming, and which from its shape was locally known as the "pepper-box." The building was erected as a market-hall; it is believed as a memorial of George III.'s jubilee, and was until recently used as a council chamber. A proposal was made for its demolition on the ground of obstruction to traffic; but it will now be repaired and utilised as a reading-room.

Captain Pretyma, M.P., is about to construct, at his own cost, a sea-wall at Felixstowe, to protect the Undercliff-road West, from Swiss Cottage to as far towards the Old Battery as is necessary.

A largely-attended memorial service was held in the parish church of Eglosheale on Sunday, in memory of the late Professor the Rev. H. C. Shuttleworth, of St. Nicholas Cole Abbey, London, who died in October last, and whose remains, in accordance with the wish of deceased, were cremated at Woking. An urn containing the ashes were placed under a memorial tablet, executed by Messrs. H. Hems and Sons, of Exeter, in the north wall of the church on Saturday last, the tablet being unveiled on Sunday afternoon by deceased's brother, the Rev. E. Shuttleworth, M.A., rector of St. Stephen's-in-Bramwell.

The Isolation Hospital, Barnoldswick, is being warmed and ventilated by means of Shorland's patent Manchester grates, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

The Launceston Corporation have decided to take over the lease of the castle from the Duchy of Cornwall. The Lord Chancellor is the present leaseholder, and he is prepared to relinquish his lease at Lady-day.

PROFESSIONAL AND TRADE SOCIETIES.

THE ARCHITECTS' ASSOCIATION.—An ordinary meeting of the Association was held on Friday evening at 9, Conduit-street, W., the President, Mr. W. H. Seth-Smith, F.R.I.B.A., in the chair. Mr. N. Costello was elected as a member. The President announced that a special meeting of the Association will be held on Friday, March 8, at 7.30 p.m., when the committee's scheme for the establishment of A. A. Day-Classes will be submitted to the members. Full particulars of the proposals, together with those of intended alterations to the By-laws, will be posted to every member in due course. Mr. E. S. Prior then read a paper entitled "Gothic Architecture and the Basis of its Beauty." A discussion followed in which, Messrs. G. B. Carvill, G. H. Fellowes-Pryne, ex-president, H. H. Statham, Francis G. F. Hooper, and the President took part, and the lecturer replied.

AUCTIONEERS' INSTITUTE.—The fifth meeting of the current session of the Auctioneers' Institute of the United Kingdom was held the other evening at their lecture-room in Chancery-lane, the President, Mr. W. A. Dew, in the chair. A paper on "The Merchandise Marks Act of 1887" was read by Mr. L. B. Sebastian, barrister, who described the history of this class of legislation and the provisions of the statute, which, he said, was the latest attempt on the part of the Legislature to provide a remedy in the Criminal Courts for the wrongful marking or description of goods. It had been a subject of discussion, even in the Law Courts, whether the object aimed at by the Act of Parliament, or by some of its individual provisions, was the protection of the trader or the protection of the public. The view which he inclined to take was that the main object was the protection of the public. Notwithstanding all adverse criticisms, he considered that it was a beneficial Act, well conceived, and capable of conferring considerable benefits upon the community if wisely administered.

THE CLERKS OF WORKS' ASSOCIATION.—The eighteenth annual dinner of the Clerks of Works' Association of Great Britain was held at the King's Hall, Holborn Restaurant, on Monday evening. About 270 members and guests were present, and the speeches were interspersed with songs and glees by the Lyric Vocal Quartette. The chair was occupied by Mr. W. E. Riley, F.R.I.B.A., Superintending Architect to the London County Council, who was supported by Professor T. Roger Smith, F.R.I.B.A., and Messrs. Thomas Blashill, F.R.I.B.A., Maurice B. Adams, F.R.I.B.A., F. R. Farrow, F.R.I.B.A., John Hebb, F.R.I.B.A., William Woodward, A.R.I.B.A., Howard Chatfield Clarke, F.S.I., John W. Stone, J. H. Freeman, J. C. Hill, F. Plowman (president of the association), Spencer Green (vice-president), James Petrie (hon. secretary), F. Dashwood (secretary), &c. The loyal toast, "The King and Royal Family," was proposed by the Chairman, who alluded, with much feeling, to the loss sustained by the nation in the death of the late Queen, and drew bright auguries as to the future from the opening of the reign of Edward VII. The toast was heartily received. The Chairman also gave the next toast, that of "The Army and Navy," with the remark that he had omitted the customary corollary "and the Reserve Forces," because the Volunteers, Yeomanry and Infantry alike, had been accepted as an integral part of our forces, and had bravely borne their share of the fighting. A martial response was given to the toast by Mr. J. Aitchinson, a veteran volunteer. In proposing the health of "The Architects and Surveyors," Mr. Spencer Green, vice-president, mentioned that the Association had been successful to a considerable extent in their efforts to raise the scale of remuneration received by all clerks of works, and they looked to the profession to support them in that endeavour. Mr. Blashill, in reply, said he was very glad to hear that clerks of works were to be more adequately paid, for buildings were increasing in importance and complexity, and fresh problems in construction had constantly to be solved. Among other directions in which this development in house-building was proceeding was that due to a general demand for fire-resisting construction. He would recommend all members of the Association to pay special attention to what was being done in the direction of providing in new buildings greater security against the spread of fire. Mr. H. Chatfield Clarke also responded, remarking that, as

an architect, he felt that members of his profession received little attention from the Press, and certainly figured rarely among the recipients of Royal honours or favours; but if that was true of architects, it might be said that the clerk of works was totally ignored by the public. He felt that the architect, and also the quantity surveyor, were under a deep debt of obligation to the clerk of works. Mr. J. Spooner, past-president, proposed the toast of "The Worshipful Company of Carpenters." Professor Roger Smith, the Master of the Company, replied. He observed that the City companies were guilds almost, if not quite, unique in character. Their history went back to a very remote period, and in most cases, as in that of his own company, the organisation dated back even further than their first charters. Formerly these companies regulated the trade, stipulating the number of apprentices that might be indentured, and prohibiting "foreigners"—i.e., those not apprenticed in the City—from exercising their craft within its boundaries. Gradually these restrictions became oppressive and fell into desuetude; but of late the companies, which had almost confined themselves to dispensing hospitality, had revived an interest in technical education, and were applying their large funds, arising from the increased value of their properties, to this purpose. He was glad to say that the Carpenters' Company had administered their trusts faithfully; they had, since larger funds had been at their disposal owing to the increased value of the estates, maintained and endowed two technical schools, and rebuilt their hall in London-Wall, where lectures and examinations in technical subjects were delivered, and they were also able to provide free accommodation for the Clerk of Works' Association, and other societies interested in the welfare of the craft. From time to time they held exhibitions of works in carpentry, and a special feature of the one to be held this year would be the offer of prizes for models of wooden houses and cottages—a mode of construction which would offer one of the solutions of the housing problem at moderate rents for rural districts. The Chairman then gave the toast of the evening: "Prosperity to the Clerks of Works Association," remarking that the name was a memorable one, for "Clerk of the Works" was the official title of Sir Christopher Wren, as architect for St. Paul's Cathedral. Many changes had taken place since then; building operations were of greater importance than ever, and were constantly growing in complexity and magnitude. He had been examining the rules of their association, and was glad to note the importance they attached to the moral character of intending members. He was not fully satisfied whether the age limit for membership "not under forty years" was not unduly high, and would suggest to the committee that this might usefully be modified so as to embrace within the Association well qualified and experienced men who were considerably under forty years of age. Without intending any disparagement to those who had been masons or bricklayers, his experience went to show that the most competent clerks of works were those who had been trained as carpenters. He was glad to see that a thorough knowledge of sanitary matters was insisted upon in their examination papers. The clerk of works, it had been said, was little known to the general public, and certainly was rarely alluded to in novels or general literature; but a clerk of works of high character was portrayed in Caleb Garth by the author of "Middlemarch." Clerks of works were not by any means overpaid, and he was glad to see that the association was taking up the question of their members' remuneration. He would only urge them to keep out of their ranks the shufflers, and fill up the perpendes, and they would then insure solid building, and attain a good standing in the eyes of the public. The toast was received with enthusiasm. Mr. F. Plowman, the president, replied in a speech of considerable length. The association, which had been eighteen years in existence, had done good service alike to its members and for architects, and now embraced 150 names. Death has been very busy among them during the past year, among the losses most regretted being that of Mr. John Woodley. The chairman had alluded to "shufflers"; it was inevitable that black sheep would get into every flock; but if any architect should have reason to complain of the conduct of a clerk of works he would confer a great favour on the whole body by reporting it to the secretary of the association, and if it should unhappily prove that the charge was well

founded and the culprit a member, they might be assured that strong disciplinary measures would be taken. They were endeavouring to raise the status of their members, and looked to the Carpenters' Co., the Royal Institute of British Architects, and the Institution of Civil Engineers to assist them in this direction. He held that the minimum weekly wage offered should be at least four guineas (Voices: "Five!" Laughter and applause), and he appealed to the chairman to use his influence with the L.C.C. to secure more adequate remuneration. Mr. J. Davies, in proposing "The Visitors," said the chairman had alluded to Sir Christopher Wren as an early clerk of works; but if they referred to the Books of Chronicles, they would see that the first testimonial given to a skilled clerk of works was that sent by the King of Tyre with Hiram to Solomon. Mr. John C. Hill (London Brick Co.), in responding, urged the formation of a benevolent fund in connection with the Association. "The Health of the Hon. Treasurer. Mr. John Oldrid Scott," was proposed by Mr. J. Brady, and the long list closed with that of "The Chairman," given by Mr. J. Watson.

EDINBURGH ARCHITECTURAL SOCIETY.—A meeting of this society was held on the 13th inst. in Dowell's Rooms, Edinburgh, Mr. A. F. Balfour Paul, the president, in the chair. A lecture on "Electric Power in Buildings" was given by Mr. Wm. A. Agnew, at the outset of which reference was made to the generation of the electric current and to the evolution of the dynamo electric machine. This was followed by a description of the various applications of electricity in buildings, as for lifts, heating, ventilating, &c. The lecture was illustrated by limelight views and by experiments.

EDINBURGH AND LEITH MASTER BUILDERS' ASSOCIATION.—At the annual meeting of the Edinburgh and Leith Master Builders' Association, held in the Building Trades Exchange, Mr. Robert Lamb, Logie Green, was appointed president for the ensuing year in place of Mr. James Miller, who retires. The meeting also appointed members of the executive and other committees.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.—A meeting of this society was held in the rooms, Park-street, Leeds, on Monday evening, when a paper was read by Mr. H. C. Corlette, of London, on the "Planning and Design of Churches." Mr. Corlette said he did not propose to discuss doubtful points in ecclesiastical architecture, or the history of churches, but to address to practical men a few practical remarks upon their planning of the building, with which their interest as architects was especially associated. In the first place, he pointed out with some emphasis the necessity of the building being made to belong to and to harmonise with its surroundings, and he proceeded to advise architects not to put too much egotism into their composition. Let the personal element be found rather in their work than in an ostentation, amounting to a vulgar display, which forced its recognition upon the notice of all who looked at the building. Proceeding, he offered some advice with regard to the selection of sites and the adaptation of the buildings to their surroundings; and he went on to deal with the technical features of plans, such as those relating to the construction of the sanctuary, the choir, the nave, the side-chapel, and the vestries. The lecture was illustrated by numerous plans and coloured drawings.

SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.—A well-attended meeting of this society was held in the School of Art, Arundel-street, Sheffield, on the 13th inst., the president, Mr. Joseph Smith, in the chair. The winners of prizes in the competition promoted by the society for measured drawings of old buildings in the neighbourhood of Sheffield were announced. Mr. H. W. Inott gains the society's prize of three guineas and the president's prize of five guineas, Mr. J. Miller the second prize of two guineas, and Mr. E. R. Bower's drawing is highly commended. Mr. H. H. Statham afterwards gave an interesting lecture on "Our Cathedral Fronts: a Comparative Criticism." He described the different characteristics of the west fronts of most of our English cathedrals, showing by limelight illustrations and drawings Lichfield, York, Lincoln, Peterborough, Ely, Winchester, Westminster, Wells, St. Paul's, Worcester, and many others. He described the French and Italian types of fronts, and critically examined the strength and weakness of the

design in each case. A vote of thanks was accorded to the lecturer, on the motion of Mr. Gibbs, seconded by Mr. Withers, and supported by Mr. Wigfull, Mr. H. L. Paterson, Mr. T. H. Waterhouse, Mr. Fenton, and the president.

COMPETITIONS.

BRISTOL.—The plans for the new workhouse infirmary have been on view this week at St. Peter's Hospital, Bristol. The site, which is a peculiar one, is at Stapleton. The committee report, in pursuance of the authority given by the guardians on May 18 last, they invited designs from the 14 architects then selected by the board for an infirmary for the sick indoor poor. The premiums offered by the committee were for the three best designs in order of merit, as per the assessor's award—£200, £150, and £100 respectively. In due course seven sets were received, and have been examined by the assessor, Mr. Keith D. Young, F.R.I.B.A., of London, who was nominated for the purpose by the President of the Royal Institute of British Architects, the committee considering it important that an unbiased and absolutely independent award should be obtained. The award of Mr. Young is appended hereto. It has been considered by the committee, and is to the effect that the three designs in all respects the most excellent and suitable for the guardians' requirements are as follows:—1st premium, £200, to design E, Mr. H. Percy Adams, of 28, Woburn-place, Russell-square, London, W.C.; 2nd premium, £150, to design A, Messrs. Giles, Gough, and Trollope, of 28, Craven-street, Charing Cross, London, W.C.; 3rd premium, £100, to design B, Mr. Arthur Marshall, of King-street, Nottingham. The committee have accordingly intimated to all the competing architects the result of the award, and now ask that the amounts named may be paid to the three architects accordingly; and also the fee of the assessor, Mr. Keith D. Young—viz., 150 guineas. The plans received from all the competitors are of considerable merit. With regard to the further steps to be taken in the matter, the committee now recommend that they be empowered to consider as to any alterations in the designs of the architect assigned the first premium which may appear to them to be desirable with the view to economy and efficiency. The approximate estimate of Mr. Adams for the whole of the building, which will contain 852 patients' beds, accommodation for the medical and nursing staff and general administrative work of the whole building, is £123,383, but the assessor intimates that in his opinion the cost will more nearly approach the sum of £153,796, although the price at which he has made his estimate is considered by the committee to be in excess of what the work can be done for here. The committee further recommend that they then be empowered to submit the plans as so altered to the Local Government Board for their consideration and approval, after which the same will be again submitted to the guardians before tenders are invited. The following is the assessor's award:—

In accordance with your instructions, I have carefully examined and compared the seven sets of designs submitted in competition for your proposed New Infirmary, and beg to report as follows:—

The three designs which best carry out the instruction and to which I consider the first three places should be awarded, are—

1	.....	E.
2	.....	A.
3	.....	B.

In making this award I have considered the comparative merits of each set of plans, giving due weight also to the question of cost.

The estimates given by these competitors appear to be all more or less inadequate, and the figures on which these estimates are based appear in each case inaccurately stated, though not equally so.

The following are the competitors' estimates:—

	General Buildings.	Laundry and Kitchen Fittings.	Total.
E.	£123,383	£2,200	£125,583
A.	103,004	6,700	115,504
B.	127,338	2,000	129,338

Of these, the amount given by A. for Laundry and Kitchen Fittings is, in my opinion, a more reasonable one than either of the others.

After correcting the errors in cubing and in calculation in all the three estimates under consideration, I think the following amounts may be taken to represent approximately the comparative money values of the three designs:—

E.	£153,796
A.	191,893
B.	168,834

It must be understood, however, that these estimates are, as stated, only comparative, and do not represent what such a Hospital as the Guardians require, if properly designed in all its parts, would, in my opinion, cost.

In the foregoing estimates each design is priced at the same figure per foot cube, and I have assumed that there would be no material difference in the quality of the work to justify any difference in the price.

It is clear to my mind that the limit of cost proposed by the Guardians is very far from being sufficient to provide the accommodation required; it would have been better if this fact, which must have been obvious to the competitors, had been frankly pointed out by them. They have, however, preferred to send in estimates which they ought to have known are hopelessly inadequate.

With regard to the general question of design, while I consider E. design to be unquestionably superior in all important points to the two others, I am bound to point out that there are many features in the arrangement which I should expect the Local Government Board would hesitate to accept or approve.

While placing Design E. first in order of merit, I cannot but refer to some paragraphs in the report submitted with that design which constitute, in my opinion, a very grave departure from the recognised rules governing every competition on which the strictest anonymity is intended to be preserved. The paragraphs I refer to are the second on p. 1, the third on p. 9, the second on p. 19, and the paragraph in brackets on p. 20. While I cannot say that the statements referred to constitute a breach of the conditions, I think it is much to be regretted that any competitor should have endeavoured to advertise his special experience in this class of work in the way, as it appears to me, the authors of this design have done.

KEITH D. YOUNG.

Either of the architects whose plans were premiated would, we are assured, have made an excellent choice; but there can be no doubt as to Mr. Percy Adams's experience and knowledge of this class of building, for which his details are generally well considered and up to date. According to the referee's figures, his design is the least expensive, as well as the most suitable.

LEEDS.—A competition among the architects of Leeds for a new branch library to be erected in Nineveh road has been decided. The first premium of £20 has been awarded to Mr. William Bakewell, F.R.I.B.A., of Park-square, and the second prize of £10 to Messrs. Buttery and Birds. Mr. Leonard Stokes nominated for the position by the President of the Royal Institute of British Architects, acted as the assessor. The cost of the undertaking has not transpired.

CHIPS.

Lord James of Hereford presented on Monday, on behalf the subscribers, the memorial portrait of the late Sir Charles Hall, Q.C., M.P., Recorder of London, to the borough council of Holborn. The portrait, which has been painted by the Hon. John Collier, and will be permanently hung in the Town-hall of Holborn, represents Sir Charles Hall in his Recorder's robes, with full-bottomed wig, and wearing the star and badge of a K.C.M.G.

Mr. Charles Herbert Shoppee, F.R.I.B.A., F.S.I., eldest son of the late Charles John Shoppee, F.R.I.B.A., of 41, Mecklenburgh-square, W.C., and 22, John-street, Bedford-row, W.C., was married on Thursday, the 13th inst., at St. Mary Abbott's, Kensington, to Miss Jemima Fountain, daughter of the late William Fountain, of Leicester.

A lecture on "Switzerland from a Contractor's Point of View" was given by Mr. John Dawson, of Sheffield, before the members of the Builders' Exchange in that city on Tuesday week. The address was illustrated by numerous lantern slides, and there was a numerous attendance of members.

A meeting was held in the town-hall, Newcastle-on-Tyne, on Friday, of the committee appointed by the corporation for the purpose of considering the question of a new town-hall and municipal buildings for the city. After a protracted discussion it was decided by the committee to recommend the council to secure the Singleton House site, if possible, for such a purpose.

The death occurred on Friday, at Sevenoaks, of the Rev. E. Sugden, who, on account of ill-health, retired about six months ago from the post of rector of St. Anne's Episcopal Church, Coupar Angus. The deceased gentleman was a native of Bristol, and, taking Holy Orders, he was in 1882 appointed to the Church of the Holy Rood, Carnoustie, where he remained for a period of five years, when he was transferred to Coupar Angus. Mr. Sugden attained some reputation as an amateur architect, and designed quite a number of church buildings in various parts of the country.

Mr. G. J. Shier, surveyor to Plympton St. Mary District Council, left Laura the other night for his home at Plympton. Subsequently his horse and trap were found in the road, and on search being made his body was discovered in the lat not far from Marsh Mills Station. Life was extinct. A verdict of "Accidentally drowned" was returned at the inquest.

At the Conference of Australian Architects held in Sydney at the beginning of January, it was decided to take steps to form a Federal Institute of Architects embodying the entire Commonwealth. Delegates from each State were appointed to formulate an outline scheme of federation.

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ILLUSTRATIONS.

"COMMON LAW" STAINED-GLASS WINDOW IN BLACKPOOL TOWN HALL.—DESIGN BY THE INTRODUCTION OF ROMAN AND RURAL STAINED-GLASS WINDOW, BLACKPOOL TOWN HALL.

Our Illustrations.

"COMMON LAW" STAINED-GLASS WINDOW IN BLACKPOOL TOWN HALL.

This window symbolises the peace and order which came into Britain in the train of the Roman invaders, superseding the chaotic and sanguinary administration which obtained under the Druidic system. After Agricola had conquered the "Sextantii," he withheld his arms for a time, that the country might appreciate the blessings of peace. A matronly female figure, her expression saddened by the scenes of blood and disorder which had overrun the land, is represented as arriving over the sea, bearing in her arms, in a casket, the just and equitable laws with which Rome governed her colonies. Under the Roman government civilisation was introduced into Britain: cities (such as Manchester) were founded: trade sprang up (amongst other things Britain became celebrated for its potteries), and peace and plenty reigned in the land. The Roman Code, which, in a modified form, was applied to the Roman colonies, is the basis of the "Common Law" of to-day. Three other windows were included in the scheme as follows:—"The Origin of Parliament," "The Revival of Learning," and "Nineteenth-Century Progress." These four windows have been fixed in the council chamber of the new town-hall at Blackpool, the architects for which were Messrs. Potts, Son, and Hennings, of Manchester. The original studies, as well as the cartoons, were prepared by Mr. George Wragge, of Wardry Works, Chapel-street, Salford. The same firm did the whole of the glass in the drawing-room of the Royal Pavilion at the Paris Exhibition. They have also done the glass and the heraldic work for the Altrincham Town Hall and the Southport Convalescent Home lately. Their new showroom is at 211, Shaftesbury-avenue, Oxford-street, London, W., where samples of glass and metal-work will be exhibited.

DESIGN BY REDLAND GREEN, BRISTOL.

The accompanying drawings from last season's Royal Academy Exhibition illustrate the Bishop of Bristol's house, erected from the designs of Mr. W. D. Caroe, M.A., the architect to the Ecclesiastical Commissioners. The plan which accompanies the perspectives displays the arrangement of the reception-rooms and private chapel—a feature which obtains recognition in the treatment of that part of the house. The chaplain's room adjoins the library, and the spacious central hall is reached by way of a vestibule from the entrance-porch, which is placed in the angle between the kitchen wing and the house proper. The dining-room is situated towards the gardens, which are also commanded from the drawing-room bay windows.

BUILDING NEWS DESIGNING CLUB: A MOUNTAIN CHURCH.

(For description and awards see p. 257.)

THE CAPITAL AND COUNTIES BANK, BRIGHTON.

As part of the long-contemplated improvement of the most important part of North-street (the leading business thoroughfare of Brighton), the Capital and Counties Banking Company offered to set back and rebuild their premises, which adjoin the Royal Pavilion. In doing so the company also rebuild part of the corporation property, and the scheme has now, after some discussion, received the approval of the town council, and will forthwith be proceeded with. The premises, as shown in our illustration, are to be built of grey Aberdeen granite and stone, and will form a notable addition to the buildings of Brighton in the centre of the town. The architects are Messrs. Clayton and Beach, of North-street.

SOUTH WALK OF THE CLOISTERS, GLOUCESTER CATHEDRAL.

The Gloucester cloisters, entered from the north aisle of the nave, are quadrangular in form, and have ten bays in each walk. Perhaps the south walk is the most interesting. In these carols or cells, which here replace the lights under the transoms, the monks read and wrote. In the north walk is situated the monks' lavatory, taking up four bays, and projecting into the garth. The beautiful vaulting is as perfect as on the day on which it was completed—five centuries ago.

CHOIR STALLS, LITANY DESK, AND PULPIT: NATIONAL SILVER MEDAL DESIGNS.

Miss AUGUSTA TRIMMER, of New Cross, was awarded a silver medal for these designs, which the judges mentioned in their report as a "workmanlike set of drawings, in which the treatment of the vine is well adapted both for its purpose and material." The judges were Sir W. B. Richmond, K.C.B., R.A., and Messrs. Walter Crane and Seymour Lucas, R.A. We have reproduced the details in line with the scale drawn on the sheets. They will, no doubt, be suggestive to many of your readers, and as an illustration of the type of work in favour with the Board of Education and their eminent advisers, they cannot fail to be suggestive. An additional interest is insured by the fact that the designs are by a lady student who is prepared, we understand, to carry the work into execution.

CHIPS.

The urban district council of Trowbridge are obtaining, at a cost of £4,092, 22s. 25p. of land as a site for the sewage-disposal works.

The rural district council for Stoneham, near Southampton, have adopted plans by Messrs. Bailey-Denton, Son, and Luford, for the drainage of North and South Stoneham, and have decided to apply to the Local Government Board for sanction to borrow £30,000 for carrying out the works.

The North-Eastern Railway Company will forthwith commence the erection of a new bridge over the Tyne at Newcastle. The structure is to be of steel—the latticed girder type. The bridge will be approached by 40ft. ashlar stone arches, and will cross the river in two spans, resting upon a central granite pier. The total estimated cost is £477,000, and a period of three years will elapse before the completion of the structure, which will be known as the Victorian Bridge.

The lighthouse which is being erected at Duart Point, Mull, in memory of the novelist, William Black, is now beginning to show on that rocky promontory as tier upon tier is added to the work. The tower has been designed by Mr. Leiper, R.S.A., Glasgow, and the contractors are Messrs. MacDougall and MacColl, Oban. Light will be supplied by compressed gas contained in a tank, which will be filled periodically by the lighthouse steamer. The estimated cost of the Black Lighthouse is £1,563. Though there is a powerful light at the western point of the island of Lismore in the entrance of Loch Linnhe, not much more than a mile from Duart Point, yet several wrecks have of recent years occurred there, the last less than three months ago.

An oak screen is to be erected in the new parish church at Hornsey in memory of the late Bishop Creighton, one of whose last public acts was the dedication of the tower and a memorial window in the church. The entire cost will be defrayed by Mr. Frederick Sherlock, a parishioner.

Plans have been drawn for a new Baptist church at Willesden Green. The cost will be £5,600, and the seating capacity of the building 723.

Engineering Notes.

HUDDERSFIELD.—The Electric Tramways town station has been formally opened. The lines have recently been passed by the Board of Trade inspectors, both as regards permanent way and overhead trolley. Under the Act of 1899-1900 powers were obtained for the construction of 19½ miles outside the borough and 3½ miles inside the borough, which, added to the 28 miles already laid inside the borough, make in the aggregate 52 miles of single track. The corporation have also running powers of over three miles in the Linthwaite district. The corporation decided to convert their system of steam haulage to one of electric traction in February, 1899, after a report by Mr. K. F. Campbell, C.E., the borough engineer, and after consultation with Mr. H. F. Parshall, C.E., of London. The borough engineer in carrying out the work has had the assistance of Mr. J. Porson, the manager of the tramways, and Mr. H. N. Thomas, resident engineer. The power station is at Lingroyd Bridge, which is centrally situated for dealing with a system of branches extending in various directions, but at present only four routes will be served, and the rest of the work will be done gradually. The site is an acre in extent. Messrs. Greenwood and Batley, Limited, Leeds, have carried out the larger part of the installation, and Messrs. R. W. Blackwell and Co., Limited, London, the remainder. The total length of tramways electrically equipped is 15 miles 7 furlongs and 8 chains of single track, and of this total length of nearly 16 miles of lines 10½ miles have been constructed by the corporation's own workmen. The sections already completed are to Linthwaite and Slaithwaite, to Paddock and Longwood, and to Lindley via Edgerton and Marsh (circular tour), and to Outlane on the confines of the boundary towards the moors. The overhead line equipment has been carried out by the British Thomson-Houston Company, Limited. The cars, of which there are 25, have been built by Messrs. G. F. Milnes and Co., of Hadley, and are not only electrically lighted, but electrically warmed, and the outside seats are of rainproof type. Except for special contracts, most of the contractors are local.

MANCHESTER.—In north-west Manchester, a new bridge has been built by the Lancashire and Yorkshire Railway Company to connect Corporation-street with Cheetham Hill-road. Eighteen months have been occupied in its construction. It will replace an older and somewhat narrower bridge that runs almost parallel with it, but nearer Victoria Station. The new bridge will carry the street traffic over the many lines of railway that, crossing from the north and east, converge upon the station. The main object of the substitution of this bridge for the old one is to enable the railway company to effect some much-needed extensions at Victoria Station. The new bridge, which has been built by Messrs. Aston Smith, Sons, and Senior, of Manchester, is of composite character having as supports steel girders resting upon iron pillars, steel girders upon brick and stone columns, and a large brick arch. This latter is double, the upper arch being immediately under the roadway, and the lower one forming the roof of a culvert over the river Irk. The bridge has nine spans. For the purposes of the railway extensions it has been found necessary to construct a new culvert into which the river Irk may be diverted. The culvert is in the form of a vaulted arch, 28ft. in depth, with a floor width of 36ft., and a total length of about 800ft. Like the stream itself, the culvert will eventually be hidden by the new platforms and the permanent way in the station.

The Union Internationale Permanente de Tramways has accepted the invitation of the Tramways and Light Railways Association to hold their congress in London next year, and the dates fixed for their reception are July 1, 2, 3, and 4, 1902. Arrangements are being made for a light railways exhibition, which will be going on during the time of the congress.

The Whitgift Governors have decided to accept £15,000, the offer of the Croydon Corporation, for the remaining portion of thirty-five acres at Croyham Hurst, South Croydon, and to apply to the Charity Commissioners to sanction the sale. This transaction insures possession in perpetuity by the ratepayers of Croydon of one of the most beautiful sylvan spots in the county of Surrey.



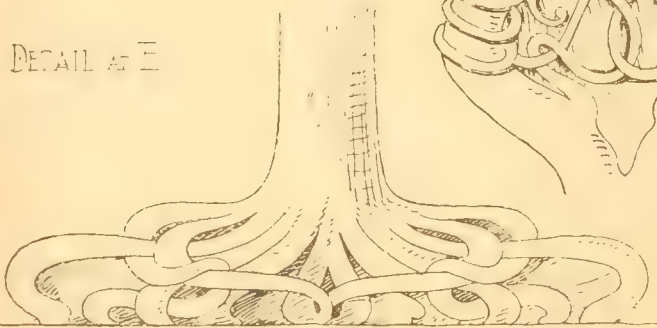
DETAIL
AT A

DESIGN FOR
A PULPIT

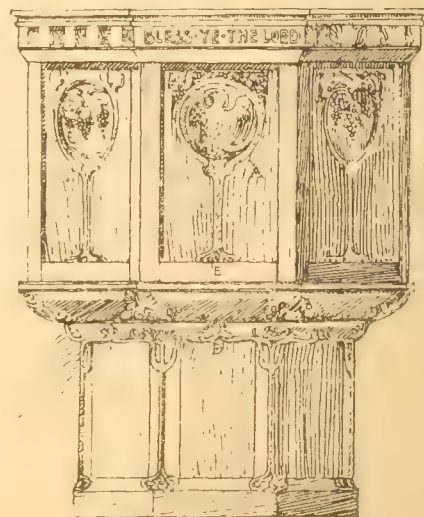
FROM NATIONAL SILVER MEDAL DRAWINGS

BY AGOSTA TRIMMER

DETAIL AT B

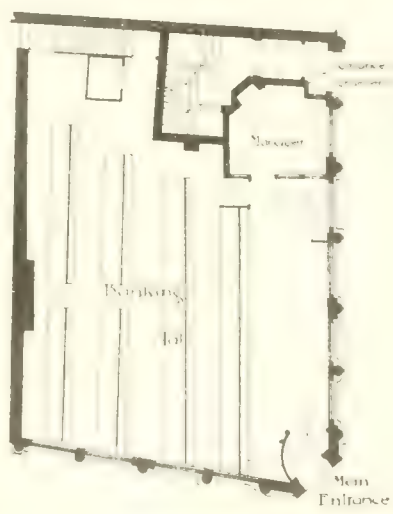


DETAIL AT C



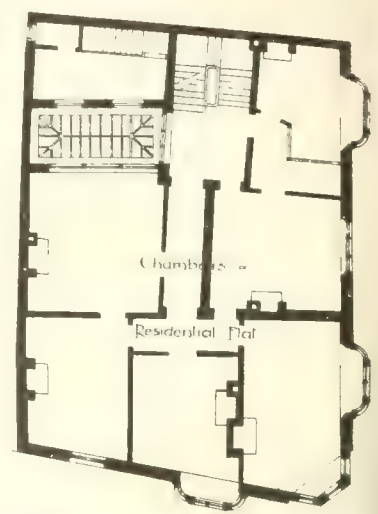
SKETCH OF PULPIT



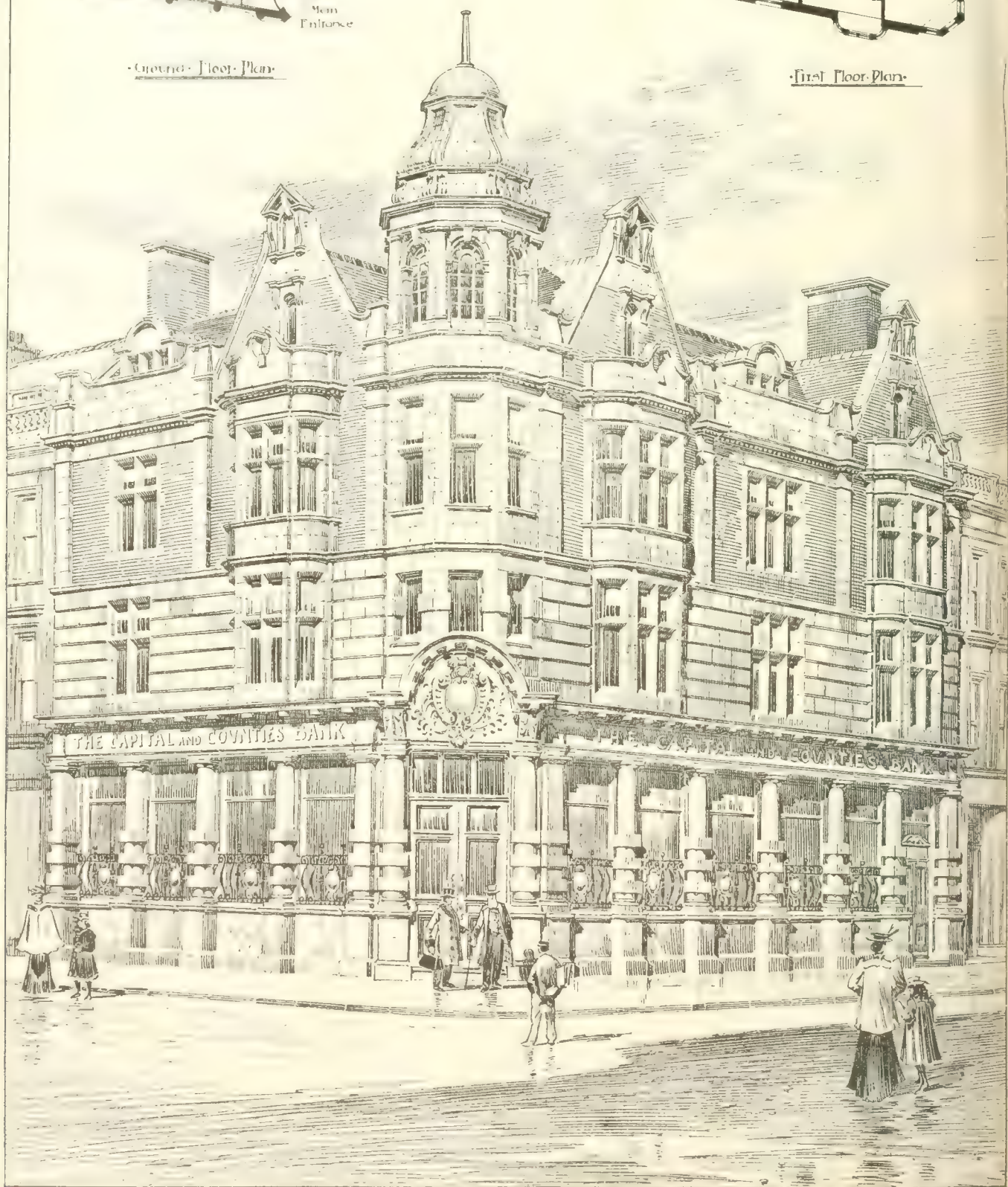


• Ground Floor Plan •

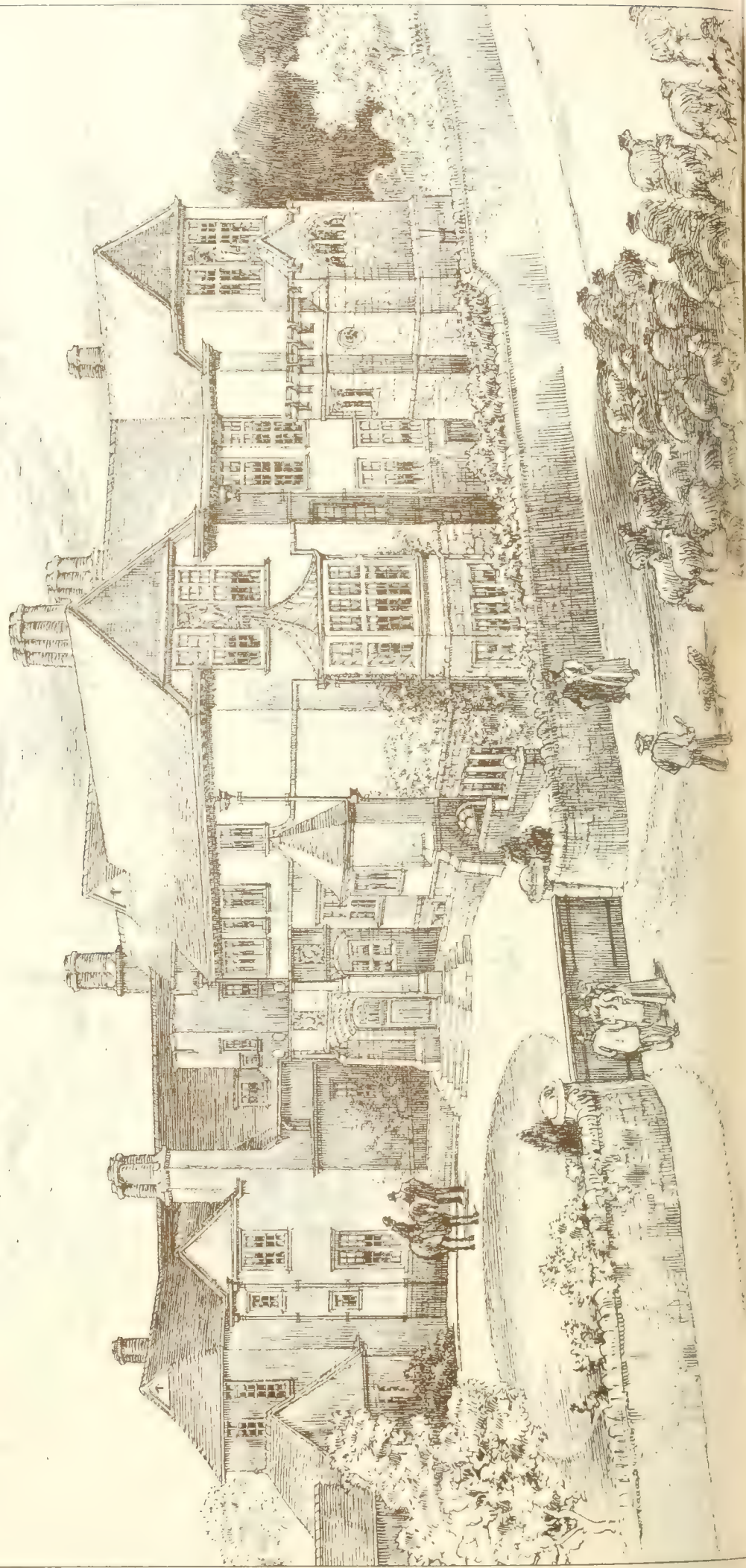
• THE CAPITAL AND COUNTIES BANK
BRIGATON •
CLAYTON AND BLACK ARMS



• First Floor Plan •





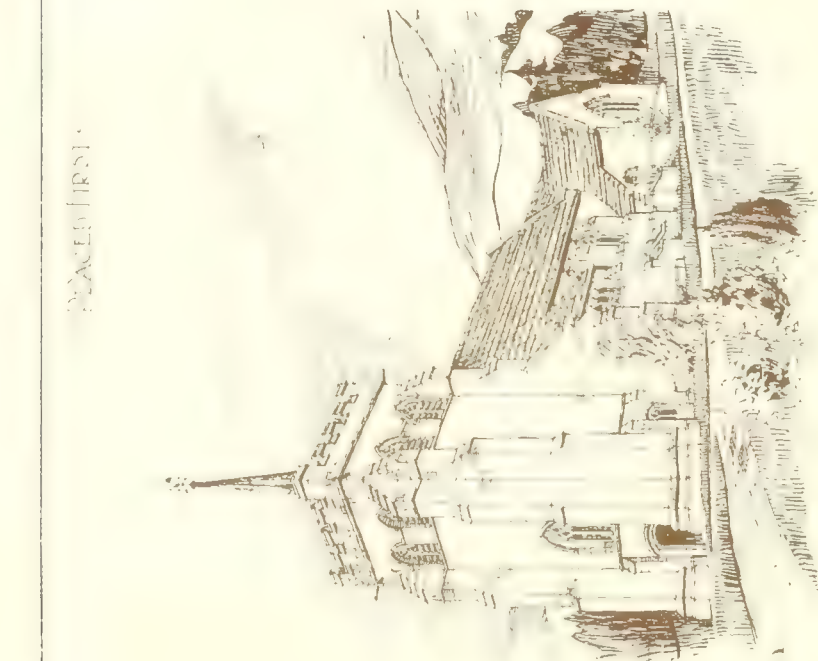




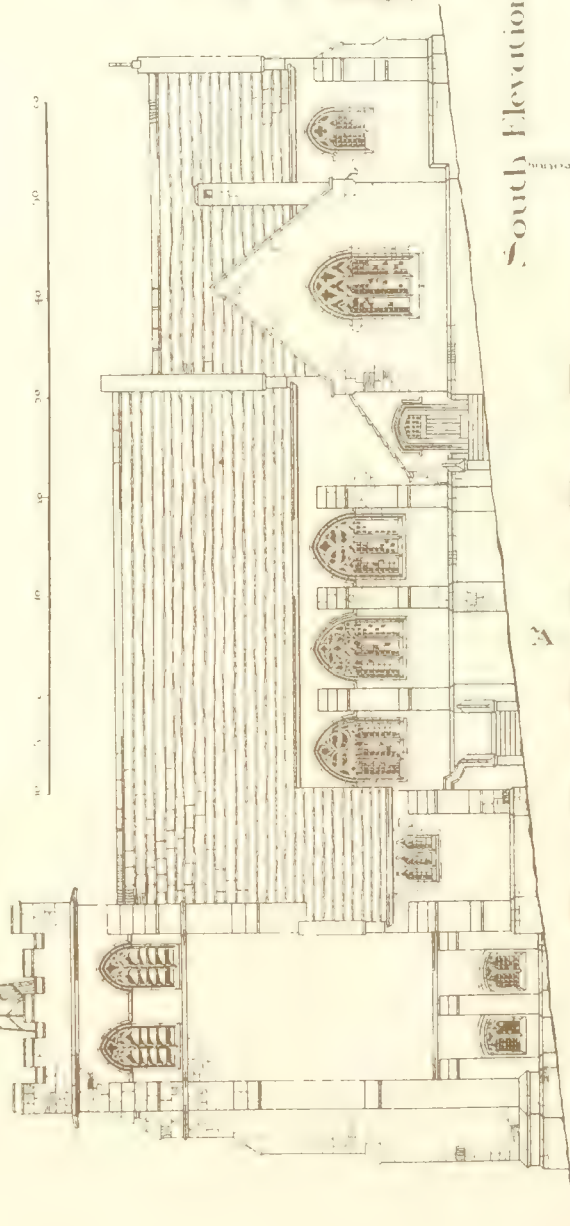
The Dominion News FEB 22, 1901.

B-N-D-C
A Mountain Church
by "Auntie Macassie".

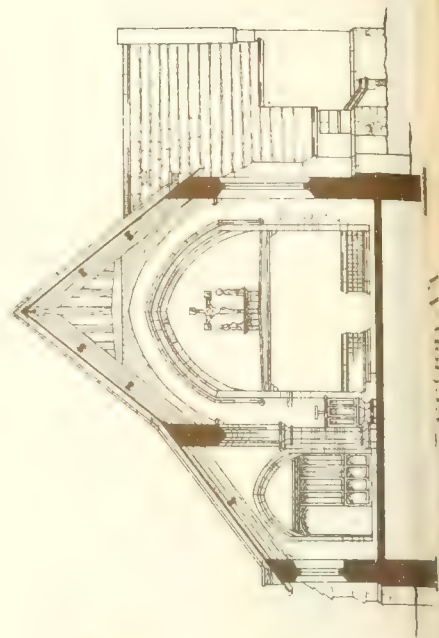
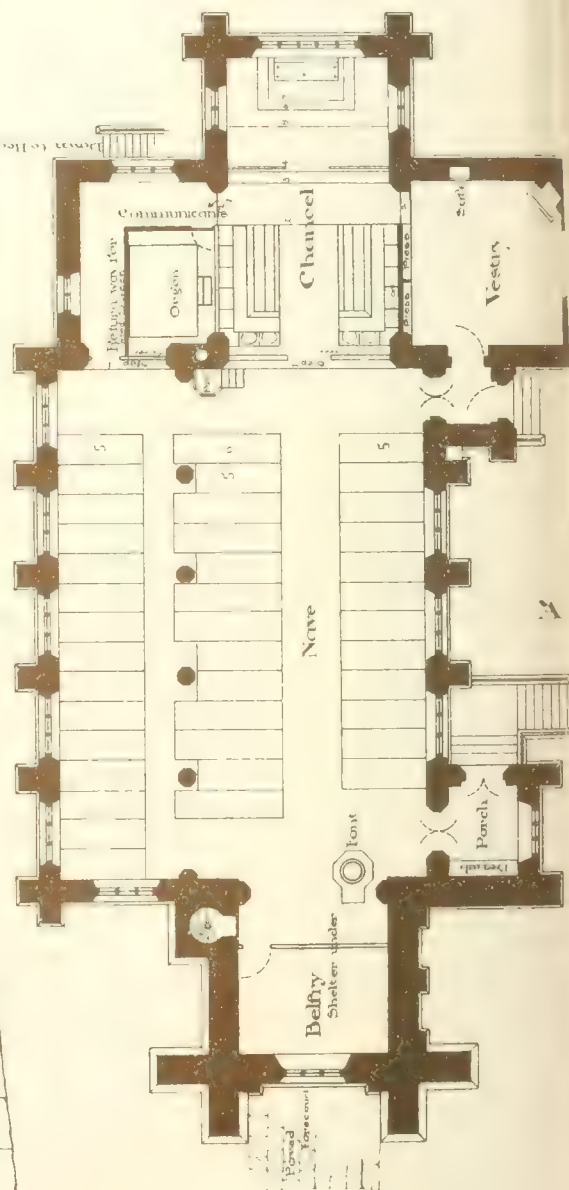
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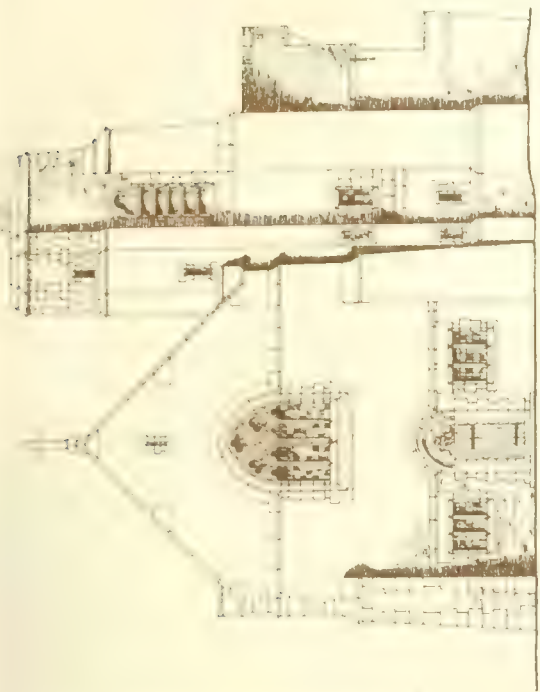
Sketch



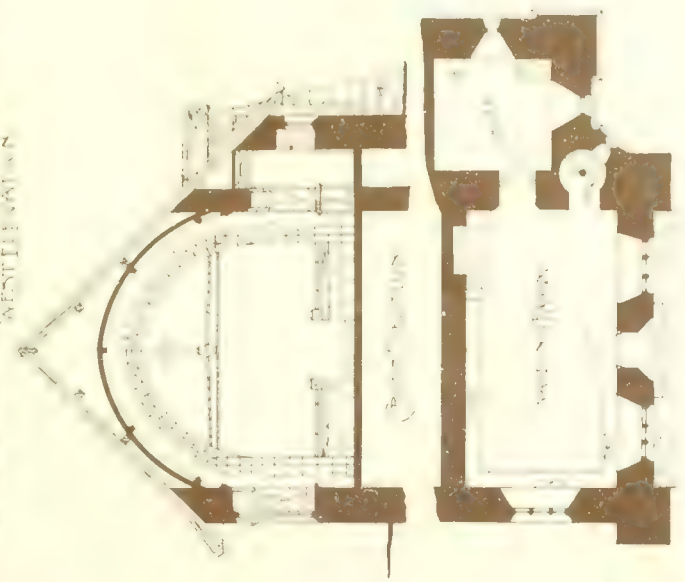
South Elevation



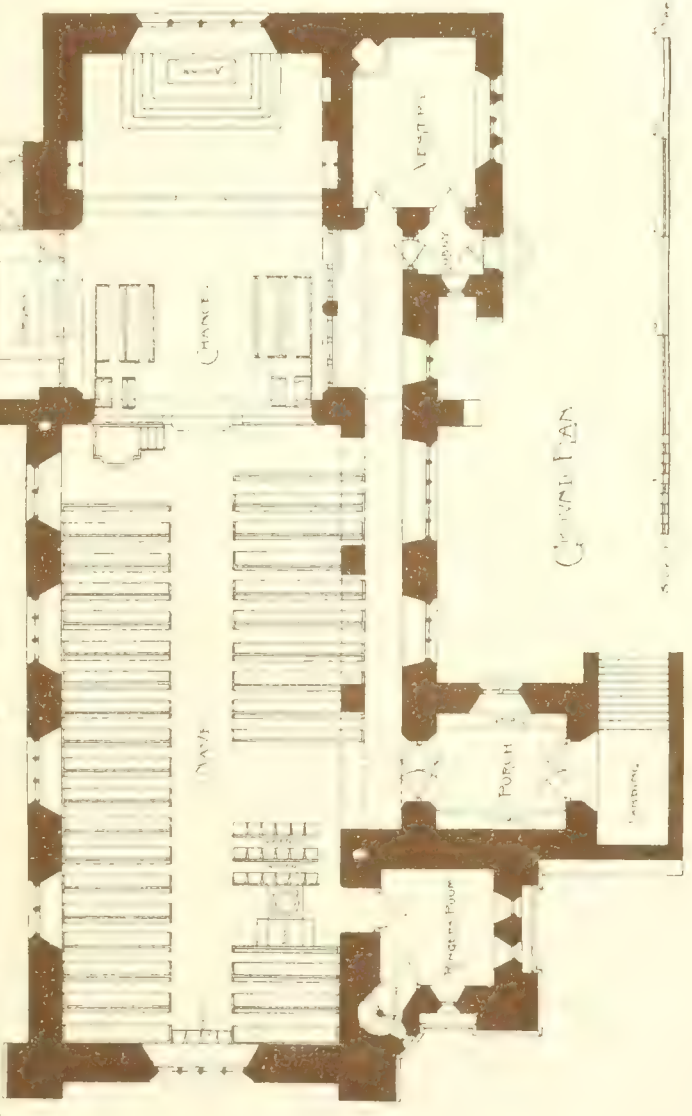
Cross Section A-A



WEST FRONT



SOUTH FRONT



GROUND PLAN

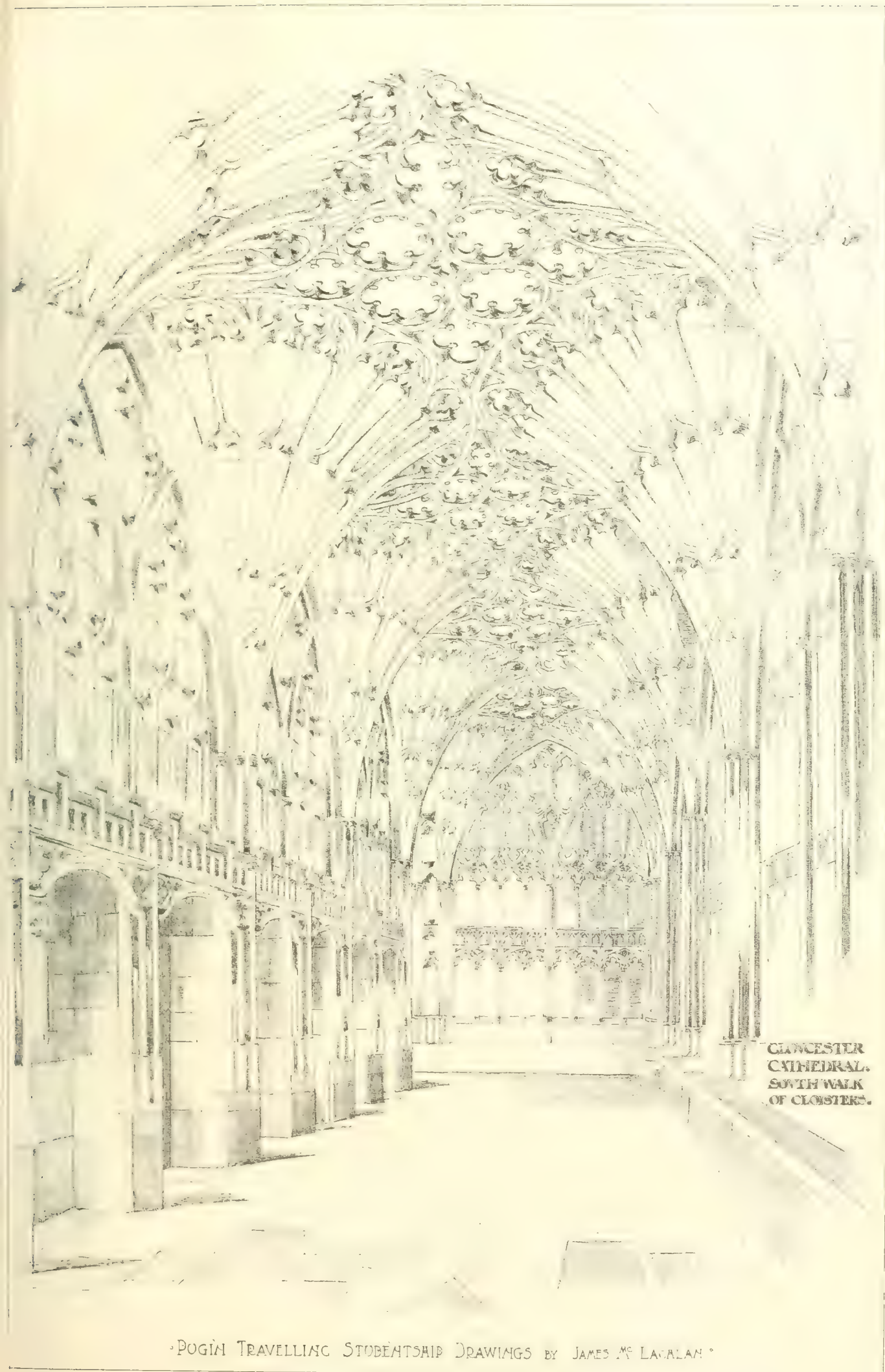


Principal Residence
Bristol

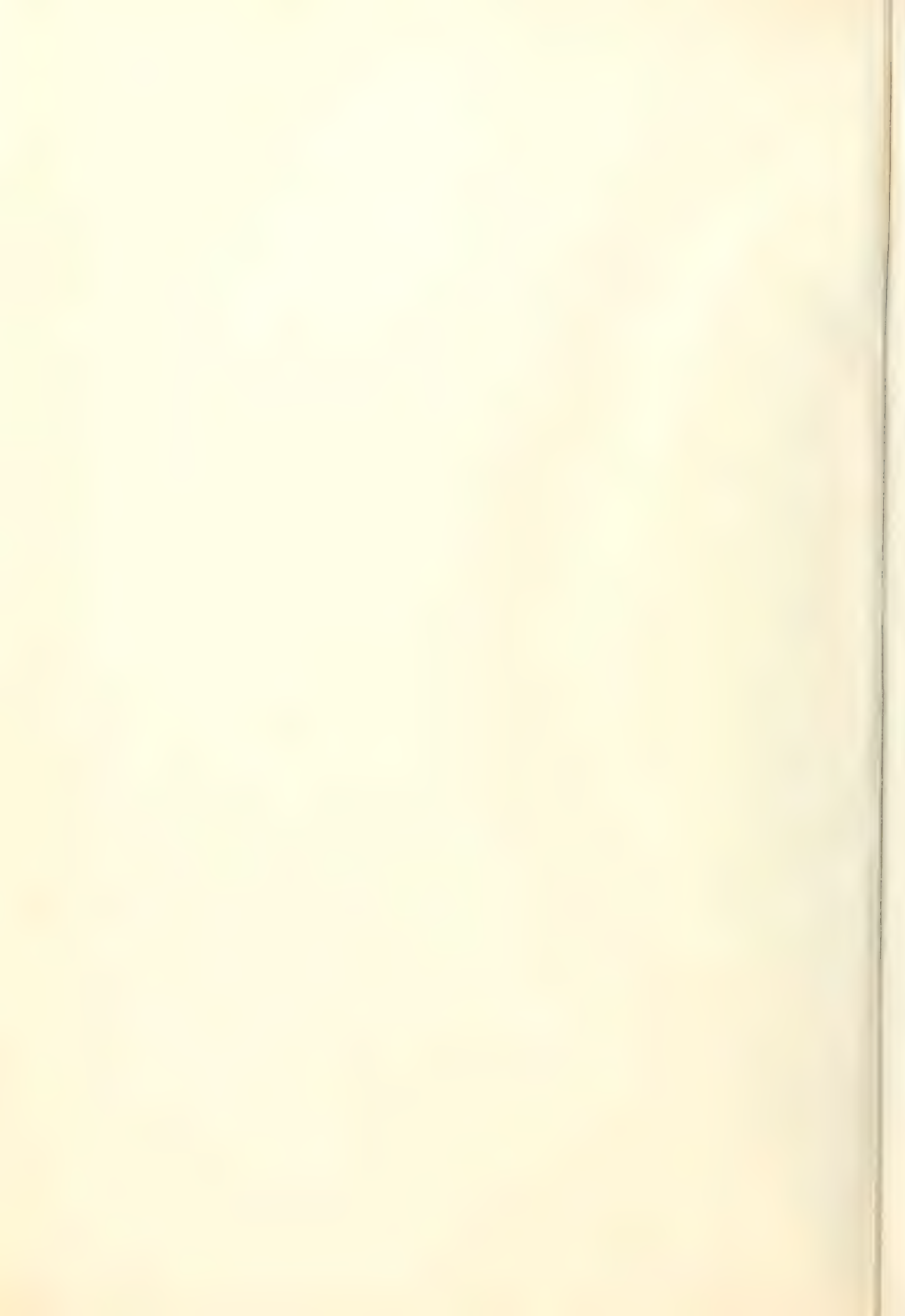


1897





GLoucester
CATHEDRAL.
SOUTH WALK
OF CLOISTERS.





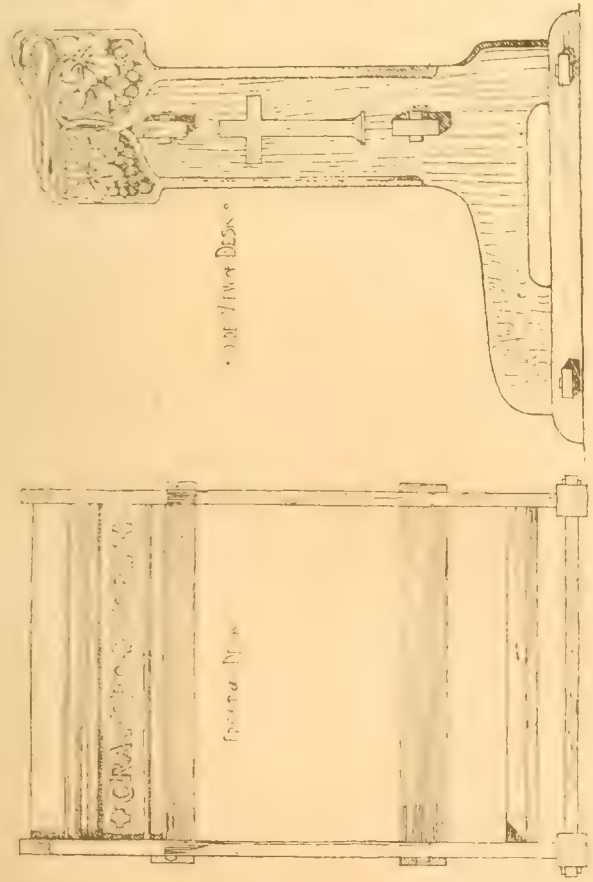




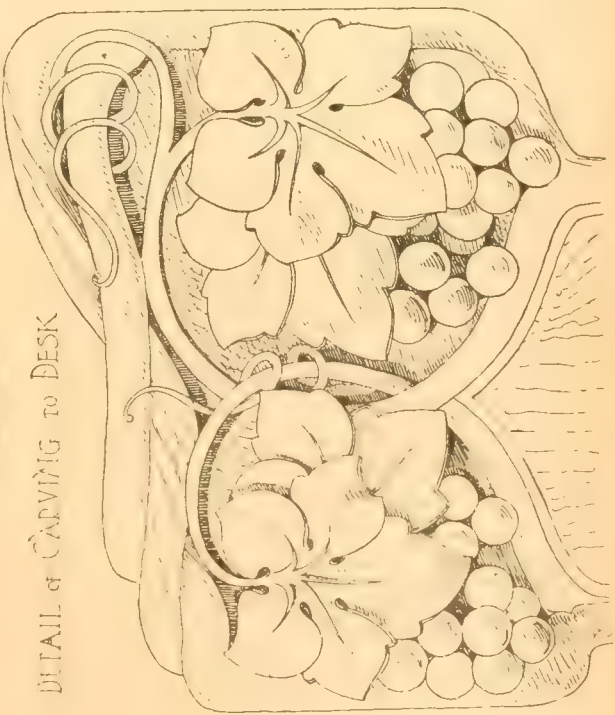
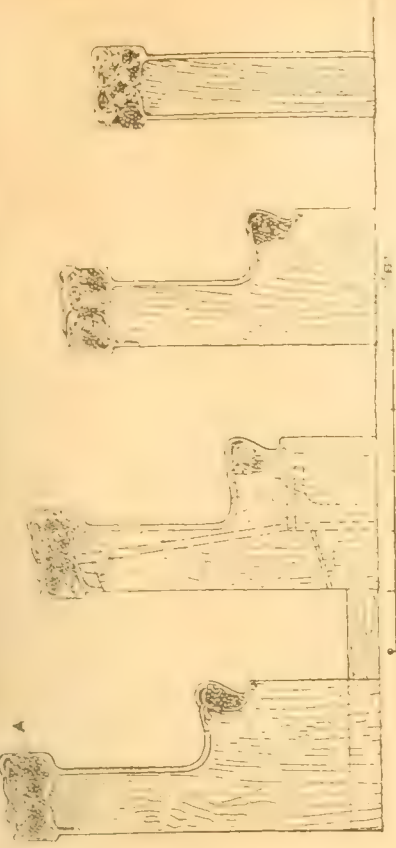
"COMMERCE" STAINED GLASS WINDOW BLACKFORD TOWER, PA.

BY GEORGE W. RAGUE





DESIGN FOR
CHURCH CHAIRS
AND
LITANY DESK
DESIGNED BY
HARTMAN & CO. LTD.
ARCHT. & INTERIOR
DECORATORS



DETAIL OF CARVING TO DESK

DETAIL AT A.

SCALE TO DETAILS.

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LONDON, W.C.,**

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[We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.]

It is particularly requested that all drawings and all communications respecting illustrations or literary matter should be addressed to the EDITOR of the BUILDING NEWS, Clement's House, Clement's Inn Passage, Strand, W.C., and not to members of the staff by name. Delay is not unfrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

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"BUILDING NEWS" DESIGNING CLUB.

DRAWING REFINED.—"PERSEVERANCE."

Correspondence.

WESTMINSTER ABBEY.

To the Editor of the BUILDING NEWS.

SIR,—Is the rumour which you contradicted last week, that Mr. J. T. Micklethwaite, F.S.A., or somebody else, contemplated whitewashing the interior of our grand old abbey, so unlikely as you think? Mr. Micklethwaite is, or was, one of the members of the so-called Society for the Protection of Ancient Buildings. These people have recently admittedly ruined the famous old Guildhall at Exeter by whitewashing it, iron ties and all. It is but a step from Exeter to Westminster.—I am, &c.,

DEVONIAN.

Intercommunication.

QUESTIONS.

[11685.]—**Cement.**—Will anyone kindly inform me how in this colony I may obtain "Keene's" cement and "Martin's" cement, and tell me something of the properties and advantages of each?—J. C. BARNSTEAD, Halifax, N.S.

[11683.]—**Oil-Putty for Slates.**—Some three years ago I designed a house which was built in an exposed position, and in order to make the roof as strong as possible, the "Ladies" slates were bedded in oil-putty, for the purpose procured from a noted manufacturer. The roof now leaks badly, and upon examination I find that the nature of the putty is quite gone out of it, and as far as I can make out, the heat of the sun has evaporated the oil, and left a substance having no cementing properties. Will anyone who knows from experience of a reliable and permanent cement, or other method of keeping the tails of slates from lifting in a nor'-wester, kindly assist me?—CORNISHMAN.

[1167.]—**Hornbeam.**—What kind of wood is this? One author says it is a species of elm, and another that it is allied to beech.—CORNISHMAN.

REPLIES.

[11677.]—**Stone for Window-Sills.**—Although I have crossed the Atlantic many times, and know the United States, generally, fairly well, I cannot pretend to pose as an expert in regard to their native marbles; but certainly think "W. E. M." has little or no ground for his assertion that "all the American marbles hitherto worked are so coarse in grain" that European marbles have to be used when it comes to really good work. I question whether he would care to make such an assertion (save anonymously) in *Stone*, for instance—that capital monthly, published in New York, and the recognised organ of the trade amongst our Transatlantic cousins. The reason why so much marble is imported from Carrara into the States is undoubtedly because of its comparative cheapness—just as in South Africa the cemeteries, from one end to the other, show hardly a decent monument that has not originally been made in Italy. According to the American Consul at Leghorn's report for last year (which may be found in *Stone* for last month) the total value of shipments from Carrara of marble (worked, or in the block) to the United States for 1899 was valued at £116,098 8s. 4d. Of all the marble exported annually from there, that great country takes 20 per cent. of the whole, whilst England and her colonies claim 15 per cent. In the Carrara district there are over 600 different quarries, and the rent charged for most of these is quite nominal, many quarryowners paying only 12s. 6d. to 16s. 8d. a year for good quarries producing hundreds of tons annually. Wages are almost equally low. I worked as journeyman there awhile myself as a young fellow, nearer forty than thirty years ago, and had to be content (or rather discontent) with 2 lire (18.8d.) a day. Wages are not much better now. At present quarrymen are paid 1s. 7d. to 3s. 2½d. a day, marble masons 1s. 7d. to 2s. 10d., carvers 2s. 5d. to 4s. 5d., and clever sculptors, who sometimes produce works of startling beauty, only receive from 3s. 2½d. to 8s. a day. The ordinary run of marble at Carrara costs from 4s. 0½d. to 6s. 8d. a foot cube. Window-sills in quantity could probably be delivered from there in this country at 13s. or 14s. apiece. "W. E. M." remarks that white marble is not a weather stone, and loses its polish in a very few years; but no practical man would ever think of polishing marble for outdoor work. If white marble will stand for fifty years in an exposed place, it is probably as long-lived as most stones, especially in London. There nothing lasts so well as carefully selected Portland. When we pulled down old Westminster Bridge, between thirty and forty years ago, most of the Portland stone, of which it was built, was found to be as good—yes, better, much harder—than ever; and we used hundreds of tons of it as dressings for the Victoria Mansions, W., which were then building. Of course, I am speaking now of the comparative lasting powers of stones in the Southern parts of England. I should not recommend Portland for Scotland, for instance—and, perhaps, *versus*. When I built my present studios, twenty years ago, red bricks and red Corshill stone were used. The latter is a good material for its own locality (Dumfriesshire); but the humid atmosphere of Devonshire has not treated it kindly, and in a few places it can be pecked away almost like sand by the fingers. I can assure "W. E. M." that America produces an immense variety of beautiful marbles, to say nothing of its lovely onyx. When in the first instance I suggested marble window-sills, I did so purely from an artistic point of view. I have seen them often enough upon the Continent, and still more frequently in the United States; but seldom in England. Of course, if one requires window-sills that will absolutely last for ever, there is nothing to touch terracotta.—HARRY HEMS.

By thirty-six votes to nineteen, the Bristol Board of Guardians have decided to pay the premiums awarded in the recent competition for a new workhouse infirmary to the successful architects, and have instructed a committee to consult with Mr. Percy Adams, the author of the first premiated design, and also to submit the plans to the Local Government Board for their approval.

The Hoylake and West Kirby District Council resolved, on Monday night, to permit Mr. Foster to resign his position as surveyor and inspector of nuisances to the council, and to appoint him as engineer for the works authorised by the Improvement Act of 1900, at a remuneration of £1,800, spread over three years, in the hope that at the expiration of that period he will be able to again take up the position of surveyor to the council, the present assistant being made surveyor in the mean time.

WATER SUPPLY AND SANITARY MATTERS.

DONCASTER.—A Local Government Board inquiry was held at Doncaster by Mr. W. O. E. Meade-King, C.E., as to the compulsory purchase of land for sewerage and sewage disposal purposes for Askern, Dawtry, Bentley-road, and Arkey. The schemes, which have been prepared by Messrs. D. Balfour and Son, of London and Newcastle-on-Tyne, comprise the main sewerage of the above places, all of which will gravitate to underground storage tanks, from which the sewage will be pumped to the site of disposal works there, to be treated in bacterial tanks and afterwards on land. Various opponents to the scheme were represented by council, who objected chiefly on the ground of cost.

ILKESTON AND HEANOR.—In compliance with the Standing Orders of Parliament estimates have been prepared by the engineer, acting on behalf of the proposed Ilkeston and Heanor Water Board, showing the cost of the works proposed to be undertaken by the Board. The works comprise the sinking of an intercepting well, communicating with the Meerbrook Sough, from which well an aqueduct will be laid down to the pumping station. Another aqueduct will be laid down to a covered service reservoir at Chadwick Nick. Two other aqueducts will also be laid down, in connection with the proposed covered reservoirs at Shipley and Codnor Park. The aggregate cost of these works is estimated at £125,000, including the purchase of property. The further sum of £6,000 will, however, have to be provided by the Corporation of Ilkeston and the urban district council of Heanor, to acquire the undertaking of the Meerbrook Sough Co.

PORTSMOUTH.—This borough is face to face with a difficulty. The drainage committee applied to the Admiralty to grant additional time for the discharge of the town's sewage into the receiving-tanks at Eastney, and while no direct reply has been sent the committee has received from the Admiralty a letter to the effect that if the necessary work for the discharge of the sewage within the stipulated time is not proceeded with the Treasury will probably withdraw its contribution to the sanitary rate. This means a loss of £20,000 per annum, and the committee has therefore decided to recommend a new scheme of drainage, involving an outlay of £150,000.

THE HOUSING OF THE WORKING CLASSES IN HACKNEY.—Dr. King-Warry, medical officer of health for Hackney, has prepared a report on the question of the housing of the working classes in his district. Dr. King-Warry points out that there were, according to the last census returns, 45,130 tenement dwellings in Hackney, and in one case as many as 11 persons occupied a single room. The number of persons afflicted by overcrowding in Hackney is estimated at 24,000. He thinks the following causes have exercised the largest influence—(1) Inadequate building of workmen's dwellings; (2) increased cost of building materials and labour leading to increased value of houses with corresponding rise in rent; (3) the disposition of late years to invest money in house property; and (4) the clearance of overcrowded and insanitary areas in other districts. Dr. King-Warry suggests that the difficulty might be met by the borough council's providing for the poorest part of the community a municipal lodging-house, to be under local control and the price of accommodation to be fixed at the lowest figure sufficient to cover working expenses and a contribution to the sinking fund. The charge should be not more than 1s. 6d. to 2s. per room per week to attract the poor classes.

WADDESDON.—On Thursday week an inquiry was held at the public hall, Waddesdon, by Mr. F. H. Tulloch, M.L.C.E., one of the inspectors of the Local Government Board, into the subject-matter of a petition presented to the Board by the Aylesbury Rural District Council to issue a provisional order to empower them to put in force, with reference to certain lands required by them for purposes of sewage disposal for the township of Waddesdon the powers of the Land Clauses Act with respect to the purchase and taking of lands otherwise than by agreement. The land in question was about three acres of glebe adjoining the Quainton-road. Mr. Guest Luckett, engineer, of Aylesbury, was present and explained the scheme to the inspector. On the following day a similar inquiry was held at Haddenham by the same inspector. Mr. G. Luckett on this occasion was also present as engineer of the scheme, and explained the plans to the inspector as on the previous day. In both cases there had to encounter considerable opposition.

Mr. Arnold Mitchell, F.R.I.B.A., delivered lecture on "Medieval Sculpture" at the London Institution on Monday evening.

The Board of Trade have recently confirmed Light Railway Order authorising the construction of a light railway in the county of Suffolk from Long Melford to Hadleigh.

LEGAL INTELLIGENCE.

WHAT IS "BLUE LIME LIME"?—The adjourned hearing of the summons brought under the Merchandise Marks Act, 1887, at the instance of the Blue Lime Burners' Association, Grovesend, Pimlico, against the Cam Portland Cement Co., Limited, of Meltham, near Royston, should have been resumed before Mr. Horace Smith at Westminster Police-court on Monday last, but owing to the pressure of other business at the court, it was further adjourned until Wednesday, March 6, at 11.30 a.m.

A RECREATION GROUND FOR ISLEWORTH.—Mr. Under-Sheriff Ruston and a jury sat on Feb. 12 at the Guildhall, Westminster, to assess the compensation in a claim by the trustees of the late J. F. Pownall for five acres and 35 perches of land taken by the Heston and Isleworth District Council for the purposes of a recreation ground for Heston. When the case was called a consultation took place, and counsel announced that an agreement had been arrived at by which Mr. H. H. Pownall, the representative of the claimants, seeing the public purpose for which this land was required, would meet it in a public manner and accept £8,000. Mr. Boyle assented, and the jury formally returned a verdict of that amount.

WHAT IS "NEGLECTANCE" IN REGARD TO DEFECTIVE SEWERS?—LAMBERT V. LOWESTOFF. —In the King's Bench Division on Monday, the Lord Chief Justice gave judgment in an action brought by F. Lambert and Sons, of Norwich, to recover damages for injury to a horse alleged to have been caused by the negligence of the defendants in the defective construction of a sewer under Cambridge-street, Lowestoff, and the defective filling-in of the roadway. The plaintiff also alleged that the defendants had negligently allowed the sewer and roadway to remain defective after their defective condition had been brought to their knowledge. The case was tried at the last Norwich Assizes. The Lord Chief Justice, in giving judgment on Monday, said that he had held, and he still held, that there was no evidence of negligence to go to the jury, and he had therefore discharged them, and it had been agreed that any inferences of fact necessary to determine the case might be drawn. The plaintiff still sought to recover on the ground that the existence of a hole in the road caused by a defect in a sewer constituted a nuisance, but this contention could not be successfully maintained. The defendants were the sanitary authority for Lowestoff under sections 13, 15, and 19 of the Public Health Act, 1875, and it was established that no action lay for the execution of a statutory duty unless there had been negligence. It was argued that if the condition of the sewer did in fact cause a nuisance the plaintiff could recover apart from negligence. His Lordship, having referred to "Bateman v. Poplar District Board of Works," "Borough of Bathurst v. Macpherson," and "Municipal Council of Sydney v. Bourke" (1895), said that they did not support the argument of the plaintiff. His Lordship accordingly gave judgment for the defendants with costs.

HEAVY PENALTY FOR NOT SUBMITTING PLANS.—Luke Rawnsley, quarry owner, of Queensbury, was charged before the West Riding magistrates at Halifax on Saturday with having committed a breach of the by-laws of the Queensbury Rural District Council. Defendant, it was shown, had erected pigsties, &c., in connection with property belonging to him in Long-lane without previously submitting plans to the council for their approval. He was warned when preparing the foundations that the submission of plans was required under the by-laws. His excuse was that, even if he had sent in plans, the by-laws gave the district council no option but to sanction them. The magistrates fined him the full penalty of £5 and the costs.

AN ARCHITECT'S ACTION.—At the Newcastle-on-Tyne County-court on Friday, before his Honour Judge Greenwell, the case of J. C. Parsons, architect, v. Edwin Gowan, cab proprietor, Heaton, was concluded. The claim was for £37 10s., for the preparation of plans, four years ago, for a proposed livery stable at Heaton. The defendant's case was that, as the plans failed to pass the town improvement committee, there should be no payment, according to an arrangement. His Honour, after having heard the evidence, said judgment must be given for the plaintiff for the amount claimed, with costs.

ARBITRATION CASE AT WEMBLEY.—At the Westminster Guildhall, last week, Mr. Under-Sheriff Ruston and a jury sat to assess the compensation to be paid to a Mr. Palmer, for land to be acquired at Wembley by the Great Central Railway Company for the purpose of carrying out the widening of that company's line. Mr. Boyle, K.C., stated that the estate was 140 acres in extent, and the railway ran across it, absorbing about two acres. A great embankment was put up about 30ft. high, which would shut out any approach to the main Harrow-road. The estate was near four stations, and the

district would be developed in the very near future. The embankment would also prevent draining into the main sewer. The claimant put his damage at £500 an acre for the land taken, with 10 per cent. for compulsory purchase, or £1,038. The rest of the property would be injured to the extent of at least £25 an acre, or £3,500 in all, and thus the claim was brought up to £4,538. His client did not want the money, and if the company would give him a bridge by which he could get into the main road, it would reduce the damages by half. Mr. Edwin Fox, of Messrs. Fox and Bousfield, who gave evidence bearing out counsel's statement, said, in cross-examination, that the agricultural rental was about 50s. an acre, but the land would probably be built upon about a year hence. Mr. William Walton, of Walton and Lee, valuer, and Mr. James Green, of Weatherell and Green, gave confirmatory evidence. On the other hand, Sir John Whittaker Ellis and other witnesses put the value of the land to be acquired at £200 an acre. The remainder of the estate would not be damaged, and the full compensation would be £414. The jury found for the claimant for £1,750.

THE ACQUISITION OF ALBERT-SQUARE, E.—At the Surveyors' Institution, Westminster, last week, Mr. J. H. Cutton, the sole arbitrator, concluded his inquiry as to the compensation to be paid by the London County Council for the property at Albert-square, on the south side of Commercial-road, E., which they had acquired as an open space under their General Powers Act of 1890. At the previous meeting evidence was taken from which it appeared that in 1889 the claimant, Mr. Morris Cohen, a mantle manufacturer, purchased the property at Albert-square, consisting of 39 houses and the open square, for the sum of £22,000, or £1,000 more than was paid by the previous purchaser. Mr. Cohen, on obtaining possession of the property, proceeded to build workshops in the rear of the houses, and, as the demand for such premises was brisk at the East-end, got an extra rental of £20 per annum for each house. He was about to erect houses with workshops and shops on the square when the County Council obtained the compulsory powers. The claimant had been offered £37,500 for his property, but had declined the offer in view of its development. The value of the vacant land at Albert-square as a building estate was variously estimated by his witnesses—Mr. Hasluck, architect; Mr. E. J. Bousfield, surveyor; Mr. Douglas Young, surveyor; Mr. H. J. Bliss, surveyor, and Mr. Alfred Moore, surveyor—at from £16,500 to £17,187. The case for the County Council was opened on Wednesday by Mr. English Harrison, K.C., who contended that the valuations of the claimant's witnesses were greatly exaggerated. He called on Mr. S. Walker, surveyor, whose estimate was £7,603; Mr. Farmer, surveyor (of Messrs. Dsbenham, Tewson, and Co.), whose estimate was £8,250 at the rate of 5s. per foot; Mr. Collins, surveyor, whose valuation was £7,920; and Mr. J. M. Knight, surveyor, who valued the open space at £7,497. The arbitrator, at the close of the proceedings, reserved his decision.

BUILDING LINE AT CHARLTON.—The Tribunal of Appeal have given their decision in the appeal made by Mr. James Ellis, architect, of Cedar Lodge, Old Charlton, and the Cedars and Quarry Estates, Charlton, against the certificate of the superintending architect of the London County Council, fixing the general building line of two houses and shops in Woolwich-road, at the corner of Ransom-road, Charlton, adjoining No. 494, Woolwich-road, under sections 22 and 29 of the London Building Act, 1894. The Tribunal have decided that the general line of buildings on the south side of Woolwich-road, between Church-lane and Ramson-road, in which part of Woolwich-road the building or buildings in question are situated, is constituted by the north main front walls of the buildings Nos. 430 to 492, Woolwich-road, and they varied the certificate accordingly. By this line the Anti-Gallican Hotel and the appellant's building are made to project beyond the other houses.

HARROGATE ARBITRATION.—Of late years a great improvement has been effected in Harrogate, in the Valley Gardens and the vicinity. Quite recently the Harlow Moor was purchased, and a large field adjoining the Valley Gardens has given additional room for promenading. An additional bandstand was last year erected, whilst the gardens were improved, and the approaches thereto laid out. Efforts have been made to secure two additional fields, situate on the north side of the Valley Gardens, with a view to protecting the springs, the fields being in close proximity to the pump rooms and the Bog's Field. On Saturday an arbitration case was held at the Crown Hotel with a view to fixing the price of the fields. The arbitrator was Mr. J. Farrer, Oulton, Leeds; umpires, Mr. T. Gott, Bradford (for the Harrogate Corporation), and Mr. J. E. Powell, Harrogate (for the trustees of the late Mr. Thomas Collins). The area of the two fields is about five acres, and it is proposed to take them under compulsory powers contained in the Provisional Order of 1897. Evidence as to value

was given by Mr. R. Horsfall, Halifax; Mr. A. Bawn, Harrogate; Mr. G. Renton, Harrogate; and Mr. B. W. Jackson, Halifax, for Messrs. Collins's trustees; and Mr. Fenwick, Leeds; Mr. T. Winn, Leeds; and Mr. A. A. Gibson, of Harrogate, for the Harrogate Corporation.

Trade News.

WAGES MOVEMENTS.

THE SKILLED LABOUR MARKET.—The January report of the Labour Department states that employment in many important groups of trades continued to decline during the month, and was considerably worse than a year ago. For the first time since November, 1897, the net result of the changes in wages recorded during the month was a decline, mainly due to the fall in the iron and steel trades. In the 144 trade unions making returns, with an aggregate membership of 545,339, 21,692 (or 4 per cent.) were reported as unemployed at the end of January, compared with the same percentage in December, and with 2.7 per cent. in the 136 unions, with a membership of 521,833, from which returns were received for January, 1900. Employment in all branches of the building trades continued to decline. The percentage of unemployed union members among carpenters and plumbers at the end of January was 4.7, compared with 4.2 per cent. in December and 2.7 per cent. a year ago. In the furnishing trades employment still further fell off, and is now bad. The percentage of unemployed union members at the end of January was 7.3, compared with 6.8 in December and 5.9 per cent. in January, 1900. The changes in rates of wages reported during January, 1901, affected 54,692 workpeople, and their net effect on the weekly wages of these workpeople was a reduction of 1s. 7½d. per head. Of this number, 51,631 sustained decreases averaging 1s. 10½d. per week, and 3,061 received advances averaging 1s. 10½d. per week.

DUNDEE.—A strike of joiners took place in Dundee on Saturday against a proposed reduction on the wages from 9d. to 8½d. per hour. Originally the masters gave notice that wages would have to be reduced 1d.; but with the object of avoiding a struggle, a conciliation board suggested as a compromise a reduction of but a halfpenny. On the ground, however, that trade did not warrant any interference with the wages, the men decided to resist the deduction, and all of them, nearly 350 in number, employed by the federated masters, struck work on Saturday. It seems, however, that the associated masters had not calculated on such an extreme step, and the committee decided to withdraw the reduction notice, so ending the strike.

GLASGOW.—The dispute which for a month past has kept the operative joiners of Glasgow in a condition of idleness was settled on Monday by the universal disappearance of the reduction notices which caused it. The dispute arose from an intimation by the master wrights that wages would be reduced from 10d. to 9d. per hour. The struggle from first to last cost the operative joiners a sum of £3,000, but against this they have the satisfaction of having gained the position, while the Master Wrights' Association have also spent money and lost business, and all for nothing in return.

NORTH OF ENGLAND BUILDING TRADES DISPUTE.—Sir John Taylor, K.C.B., the arbitrator appointed by the Board of Trade in the dispute between the building trade employers and the bricklayers in the Newcastle district has given his award. The men's demand was that their wages should be 11d. an hour instead of 10d., and, though the masters offered that the wages should remain unreduced for a prolonged period, the men went on strike, and remained out of employment for nearly a year. The arbitrator has decided in favour of the employers.

TROUBLE IN THE CEMENT TRADE.—Following upon big discharges of men from the works on the Medway included in the combine of the Associated Cement Manufacturers, an intimation has been given that a new scale of pay for the workmen, representing a reduction of 40 per cent. in wages, will be introduced. The men affected by this order include, says the *South-Eastern Gazette*, those engaged in loading, unloading, and washmill work, kiln drawers, crane drivers, and burners. The workmen have pledged themselves to fight to the bitter end against the reduction, and on Friday about 400 men left work. The reductions proposed by the board vary from 7½ to 33 per cent. It is stated that the decision was come to owing to its being found impossible to manufacture cement at a price to enable them to compete in the Continental and foreign markets. The foreigner, it is said, is even cutting out the Englishman in supplying our own colonies. The directors had a consultation at Gillingham on Friday morning, and decided to shut down half their factory at once. This will affect over one hundred men.

Our Office Table.

It is highly satisfactory to learn that His Majesty's Office of Works have yielded to the protests raised by Mr. Alfred Waterhouse, R.A., and others against the intention to bring forward the New Lands Registry Office 28ft. in advance of the general line of buildings on the south side of Lincoln's Inn-fields. Lord Esher, the secretary, has now officially informed the London County Council that, in view of all the circumstances, Mr. Akers-Douglas has decided that the building line of the square shall be, if possible, adhered to; and in any case, should it be found necessary to advance the frontage of portions of the new building, such advance shall not extend further than 6ft. beyond the building line of the square.

PROFESSOR FLINDERS PETRIE writes from Arabah, in Upper Egypt, as to the future conservation of Stonehenge. He depreciates any attempt to break the marvellous effect of the lonely plain and great masses of stone. The sight is, he says, the most impressive in England, and on no account should it be destroyed by a hideous iron railing, such as now defaces Kitz Coty house. If a fence were necessary, a sunk ha-ha would be the only form permissible. The public might surely provide a guard to live near by, in a cottage hidden by earth-banks, so as not to spoil the surroundings. To trim up the place, by re-erecting every stone that has fallen, would, he considers, be no benefit either to its appearance or to archeology. A few stones that have fallen since accurate plans have been made might be fairly replaced within two or three inches. But the real effort should be to save those now gradually yielding over, especially the largest stone of all. When leaning stones have been pushed up into place, then all the unstable ones should have a concrete bed filled in, below the turf level, as Dr. Petrie proposed 20 years ago. The whole soil under a stone might be removed while the block was clamped in a timber frame. While needful repairs were being made, an important chance of historical research would be open, and possibly a thorough exploration might be made at the time; but not a handful of soil should be moved except under the instant inspection of a good archeologist, who ought to live in a shed at the site. The workmen should be trained hands, and full local value should be paid to them for everything they find. A perfect record of every scrap—even of pottery—should be kept, and the ground cut away in such measured slices that the place of every object is known to an inch. Finally, the public must be kept out from all interference from the portion being worked. It transpired at the meeting on Wednesday of the Wilts County Council, that a committee of that body has the preservation of Stonehenge under consideration, and is in communication with the landowner, Sir E. Antrobus, and also with the Society of Antiquaries.

For the last seven years the city surveyor's department of the Manchester Corporation has been in what has been described as a deplorable state of insubordination. Sir John Harwood informed the city council on Wednesday that the insubordination was just as bad as seven years ago. Statements had been made by Mr. Gibbons, the architect, as to the unsatisfactory way in which he was treated by the city surveyor, but that might arise from the difficulties of the situation. The system at present was that an architect, having prepared a plan after careful consideration as to its adaptability, took it, not to the council or a committee, but to the city surveyor, who was not an architect. The city surveyor was an excellent man, but not an administrator. It was worth £1,000 yearly to have a man who understood Parliamentary usages, and could take plans to the House of Commons, winning the favour of the committees there by his thought and knowledge. Sir John believed that if it were adopted the committee's recommendation would insure the smooth working of the department which had caused more friction and feeling than any other he had ever known. After some discussion, the council adopted the recommendation.

A MEMORIAL has been lodged with the Royal Scottish Academy by certain influential water-colour artists, including three Associates—viz., Messrs. T. Scott, R. B. Nisbet, and H. W. Kerr, and several members of the Royal Water-Colour

Society, against the treatment accorded to water-colour drawings by hanging them in juxtaposition with architectural and other black and white drawings in the present exhibition. This, the memorialists allege, is in the face of a distinct arrangement made to in 1899 that a separate room should hereafter be given to the water-colour drawings. In consequence, the memorialists, who include three Associates of the Academy, have withheld their works in this medium from the exhibition which opened on Saturday last.

A GENERAL assembly of the Royal Scottish Academicians and Associates was held on Friday, under the presidency of Sir George Reid, for the election of a sculptor member. On a vote of 20 to 17, Mr. James Pittendrigh Macgillivray was elected, the other Associate in the running being Mr. W. Birnie Rhind. The new Member of the Academy was born at Port Elphinstone, Aberdeenshire, in 1856. His father was a sculptor and an exhibitor at exhibitions both in Edinburgh and Glasgow. Mr. Macgillivray was a pupil of the late Mr. Brodie, R.S.A., and a student at the Royal Institution, Edinburgh. He settled in Glasgow, and remained there for a number of years, executing busts of many well-known West of Scotland citizens, occasionally exhibiting also pictures in oil. He also executed decorative work for architectural purposes, some of which may be seen at the Glasgow Municipal Buildings, at the entrance of the new Fairfield Shipbuilding Offices, and at the Medical School. The Dr. Peter Low memorial in Glasgow Cathedral was also the work of his hand. In 1892 he was elected an Associate of the Royal Scottish Academy, and shortly afterwards removed to Edinburgh, where he has since resided. Among his later works are the colossal statue of Robert Burns at Irvine, the Allan Monument in the Necropolis, Glasgow, the Dean Montgomery recumbent statue in St. Mary's Cathedral, Edinburgh, and many busts in bronze and marble, both of men and women. Mr. Macgillivray is the sculptor designate of the Scottish memorial to Mr. Gladstone to be erected in Edinburgh.

MEETINGS FOR THE ENSUING WEEK.

MONDAY.—Surveyors' Institution. "The Present Condition of the Building Industry," by Thos. Blashill, F.R.I.B.A. 8 p.m.
Royal Institute of British Architects. Address to Students by the President, William Emerson: "Criticism of Competitive Designs and Drawings," by J. Alfred Gotch, F.S.A. 8 p.m.
Society of Arts. "The Bearings of Geometry on the Chemistry of Fermentation," Cantor Lecture No. 3, by W. J. Pope. 8 p.m.

TUESDAY.—Institution of Civil Engineers. "The Rotatory Process of Cement Manufacture," by W. H. Stanger and Bertram Blount. 8 p.m.

WEDNESDAY.—Society of Arts. "The Outlook for the World's Timber Supply," by Dr. W. Schlich, C.I.E. 8 p.m.
Northern Architectural Association. "Legal Topics of Interest to Architects and Surveyors," by Algernon Barker, B.A., of Newcastle-on-Tyne. 7.30 p.m.
St. Paul's Ecclesiastical Society. "Notes on the Brasses of Kent. Part I.: Ecclesiastical and Military," by Mill Stephenson, F.S.A., St. Paul's Chapter House, E.C. 7.30 p.m.

THURSDAY.—Society of Arts. "Railways and Famines in India," by Horace Bell, M.Inst.C.E. 4.30 p.m.
Carpenters' Hall Free Lectures. "Old London," by H. C. Richards, M.P., K.C. 8 p.m.

FRIDAY.—Architectural Association. "The Paris Exhibition, 1900," by E. W. M. Wonnacott, A.R.I.B.A. 7.30 p.m.

THE ARCHITECTURAL ASSOCIATION.
TUESDAY, MARCH 13, ORDINARY GENERAL MEETING at 8 p.m. at the Royal School of Art Needlework, 1, Upper St. Martin's Lane, W. 1. PAPER by Mr. E. W. M. Wonnacott, on "The Paris Exhibition, 1900." Tickets 1s. 6d.
MARCH 22nd—SPECIAL VISIT to the Royal School of Art Needlework, 1, Upper St. Martin's Lane, W. 1. Tickets 1s. 6d.
MARCH 23rd—SPECIAL VISIT to the Royal School of Art Needlework, 1, Upper St. Martin's Lane, W. 1. Tickets 1s. 6d.
MARCH 24th—SPECIAL VISIT to the Royal School of Art Needlework, 1, Upper St. Martin's Lane, W. 1. Tickets 1s. 6d.
MARCH 25th—SPECIAL VISIT to the Royal School of Art Needlework, 1, Upper St. Martin's Lane, W. 1. Tickets 1s. 6d.
MARCH 26th—SPECIAL VISIT to the Royal School of Art Needlework, 1, Upper St. Martin's Lane, W. 1. Tickets 1s. 6d.
MARCH 27th—SPECIAL VISIT to the Royal School of Art Needlework, 1, Upper St. Martin's Lane, W. 1. Tickets 1s. 6d.
MARCH 28th—SPECIAL VISIT to the Royal School of Art Needlework, 1, Upper St. Martin's Lane, W. 1. Tickets 1s. 6d.
MARCH 29th—SPECIAL VISIT to the Royal School of Art Needlework, 1, Upper St. Martin's Lane, W. 1. Tickets 1s. 6d.
MARCH 30th—SPECIAL VISIT to the Royal School of Art Needlework, 1, Upper St. Martin's Lane, W. 1. Tickets 1s. 6d.

In the case of the application on behalf of Henry Rye Mercer, of Folkestone, builder, the order of discharge from bankruptcy has been suspended for three years ending January 7, 1901.

CHIPS.

The recent discovery of Roman remains at Rothley Temple, near Leicester, once the seat of Mr. Thomas Babington, and the birthplace of his nephew, Lord Macaulay, has now been followed by the uncovering of a portion of a Roman pavement in the older portion of Leicester itself. This compares favourably with some of the more important "finds" of previous generations, the tesserae being small and set in an artistic pattern. The corporation has been communicated with in order to transfer the pavement to the already valuable municipal collection.

The London and North-Western Railway Company's scheme to construct additional dock works at Garston will, it is estimated, be carried out at a total cost of £450,183, of which the actual dock works will require £37,795, and the channel in front of Garston Docks a further sum of £72,388. The dock will extend for a distance of 300 yards in a south-easterly direction from the south-east end of the company's existing Old Dock, and from north to south for a distance of 500 yards. The time required for construction is seven years.

The Bishop of St. Asaph appeals for £5,000 to complete the restoration of the grand Perpendicular parish church of Wrexham. The work is in progress under the direction of Messrs. Prothero and Pailott, of Cheltenham, at an estimated cost of £9,000, of which about £4,600 is in hand. The builder is Mr. Thompson, of Peterborough.

A meeting of the Edinburgh Lunacy Board was held on Monday, at which the cost and arrangements of an asylum at Bangour were gone into. An asylum at Bangour is to be erected to accommodate six hundred of the insane poor, capable of extension to one thousand. Sir John Sibbald reported on the German village system, and it was resolved to adopt this method, at an estimated cost of about £200,000.

A new board school was opened in the Broadway, Sheerness, on Monday, Feb. 11. There are two departments—one for the senior girls, and the other for the juniors. The building has been erected at a cost of about £12,000.

The grand organ which is to be erected in the concert-hall of Glasgow International Exhibition has been specially designed for its place by Messrs. Lewis and Co., Ltd., London. It consists of three manuals and pedals; there are five spreading stops, and the total number of pipes is 2,889. The manual compass is from CC in alt. (five octaves), and the pedal compass is CCG to F (30 notes). The action throughout is on the tubular pneumatic system, and all the interior pipes are of spotted metal. The organ is blown by an electric motor.

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| <p>Aldgate, Atkin & Co.'s Tobacco Factory.
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Birmingham, Dean's Warehouse.
Buckingham Palace, Royal Mews.
Bradford, Brown's Warehouse.
Cheltenham, Electricity Works.
Commercial Road, Gardiner's Warehouse.
Carnaby Street, Electricity Works.
Commercial Road, Caird & Rayner's Factory.
Friar Street, Judd's Printing Works.
Gloucester, Electricity Works.
Hackney, L.G.O. Co.'s Stables.
Homerton, Crown Perfumery Co.'s Factory.
Ipswich, Ransome, Sims, & Jeffery's
Pattern Shop.
Leicester, Advertiser Printing Works.
Lincoln, Doughty's Oil Mills.
Lambeth, Peter Brotherhood's Warehouse.
Middlesbrough, Electricity Works.
Nottingham, Hall's Bone Mills.
Pickle Herring St., France & Co.'s Warehouse.
Strand, "The Morning Post."
Southwark, Cropper & Co.'s Factory.
Tottenham Court Road, Shoolbred's
Warehouse.
Upper Thames Street, Blundell, Spence,
& Co.'s Warehouse.
Whitecross Street, G.N.R. Goods Depot.</p> | <p>Birmingham, R. F. Hall & Co.'s Cycle Works.
Bromley, Dunn's Furniture Warehouse.
Blackfriars, Purfleet Wharf, Cold Storage.
Bristol, Fry & Sons' Warehouse.
Chelsea Wharf, L.G.O. Co.'s Stores.
Chislehurst, Electricity Works.
Carmelite Street, "Daily Mail" Printing
Works.
Coventry, Humber Cycle Works.
Derby, Ice and Cold Storage.
Golden Lane, Sutton's Carriers' Depot.
Gt. Marlborough Street, Erard's Piano
Warehouse.
Holloway, L.G.O. Co.'s Stables.
Horseferry Rd., Gas Light & Coke Co.'s Stores.
Kensington, J. Barker & Co.'s Warehouse.
Liverpool, Bibby's Oil Mills.
Leeds, Electricity Works.
Maida Vale, Welford & Sons' Dairy & Stores.
Manchester, Horrockses, Crewdson & Co., Ld,
Warehouse.
Newport, Electricity Works.
Rotherhithe, Union Oil Mills.
Southwark, Barclay & Fry's Printing Works.
Smithfield, Smith's Bacon Curing Factory.
Temple Avenue, The Argus Printing Works.
Upper Thames St, Davidson's Warehouse.
Ludgate Hill, Express Dairy Co.'s Depot.</p> |
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Many of the above are New Buildings, others are large Additions or Reconstructions, and have been carried out to the entire satisfaction of the Architects.

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LIST OF COMPETITIONS OPEN.

Nottingham-Sewerage Scheme for the Parishes of Colwick-Gilling and Burton-Joyce
 Keighley-Public Library, North-st. (limit £9,000. Assessor £50, £30, £20)
 Dudley-Six Villas and Six Cottages £10
 Melton Constable-Mission Church (300 places)

C. J. Spencer, Clerk, Public Offices, Basford, Nottingham Mar. 25
 W. H. Hopkinson, A.M.I.C.E., Boro' Eng., Town Hall, Keighley April 30
 G. W. Waring, Mining Engineer, 42, Wellington-street, Dudley
 The Rector, Melton Constable, Norfolk

LIST OF TENDERS OPEN.

BUILDINGS.

Walker-Bowl Pavilion in Park	Urban District Council	T. T. Laycock, Surveyor, Mechanics' Institute, Church-st., Walker Feb. 23
Ludgershall-Chambers	Town Council	A. Herbert, Surveyor, High-street, Andover
Oswestry-Fire Station	R. Howell	G. William Lacey, Boro' Engineer, Guildhall, Oswestry
Carlisle-Alterations to 51, English-street	Town Council	Geo. Armstrong, Architect, 24, Bank-street, Carlisle
Broadstairs-Pair of Villas, Queen's-road	Council	J. Jarman, Elm, Crescent-road, Ramsgate
Middlesbrough-Purmer House	Urban District Council	David Terrace, Gas Manager, Middlesbrough
Aberdeen-Octagonal Chimney Stalk, 200ft., Dee Village	J. M. Holman	Al-x. Smith, Engineer, Corporation Gasworks, Aberdeen
Barry Island-Schoolroom, &c.	Swindon and Highworth Guardians	G. A. Birkenhead, M.S.A., Architect, Caledonian Chambers, Cardiff
Wakefield-Boiler-House at Baths	School Board	The City Surveyor, Town Hall, Wakefield
Anechgarth-Farm Offices	Gas Committee	Davidson and Garden, 12, Dee-street, Aberdeen
Westhoughton-Brick Culvert at Knowles Bridge	Bernard M'Elhinny	Thos. Partington, Surveyor, Westhoughton
Bradford-Wesleyan Chapel, Westgate Hill	Hy. Child	Walker and Collinson, Architects, Swan Arcade, Bradford
Canborne-Residence	W. R. Milner	Sampson Hill, Architect, Green Lane, Redruth
Newcastle-on-Tyne-Converting Presby. Ch. into Business Prem.	Casebourne and Co.	Benjamin F. Simpson, F.R.I.B.A., 12, Grey-st., Newcastle-on-Tyne
Stratton St. Margaret-Infirmiry, &c.	London County Council	R. J. Bewick, M.S.A., Architect, 35, Regent-street, Swindon
Hove-Small Alterations at Town Hall	King's Norton Union Guardians	H. H. Scott, Borough Surveyor, Town Hall, Hove
Bristol-Domestic Subjects Centre at Mina-road Schools	W. A. Ross and Sons, Ltd.	W. P. Saunders, Architect, Rupert Chambers, Quay-street, Bristol
Kingsussie-Villa, East-terrace	Corporation	Alexander Mackenzie, Architect, Kingsussie
Leeds-Alterations to Workshops, Meadow-lane Gasworks	London County Council	R. H. Townsley, General Manager, Gas Offices, Leeds
Penycae-Church	Isle of Thanet Union Guardians	R. W. Llewellyn, Baglan Cottage, Briton Ferry
Omagh-Business Premises	Geo. Sidwell	M. Sellars, C.E., Architect, Omagh
Keighley-Three Cottages, Park-lane	Port of Hull Soc.'s Cottage Homes.	John Haggis and Sons, Architects, North-street, Keighley
Leeds-Shop Premises, &c., Briggate	M. Flood	Thomas Winn and Sons, Architects, 92, Albion-street, Leeds
Withernsea-Connalescent Home	Derwent Valley Water Board	Runton and Barry, Architects, Savile-street, Hull
Harrogate-Stabling, &c., Trafalgar-place	Corporation	T. E. Marshall, Harrogate
Whitwood Mere-Warehouse, Cinder-lane	Yorkshire Banking Co., Ltd.	Arthur Hartley, Architect, County Chambers, Castleford
Rawtenstall-Baptist Church, Kay-street	Whitley and Monkseaton U.D.C.	J. H. Spencer, F.G.S., Architect, Bury-road, Rawtenstall
London, N.W.-Fire-Brigade Station, Euston-road	Guardians	The Archt.'s Dept., F.B. Branch, 3, Warwick-st., Charing Cross, S.W.
Shenley Fields, Harborne-Probationary Home	Parochial Charities Trustees	Edwin Docker, Clerk, Workhouse, Bally Oak
Merthyr Tydfil-Rebuilding Bird-in-Hand Inn, High-street	Tramways Committee	C. M. Davies, Architect, 112, High-street, Merthyr
Belfast-Additions to Premises, Montgomery-street	Notts Agricultural Society	Graeme-Watt and Tulloch, Architects, 77A, Victoria-st., Belfast
Harrogate-Extension of Boiler-house	Norfolk Cold Storage Co.	F. Bagshaw, Borough Engineer, Municipal Offices, Harrogate
Carlton-Almshouses	Trustees	R. Eccles Buchanan, Architect, Castle-street, Londonderry
London, W.C.-Three Blocks Workmen's Dwellings, Drury-lane	Urban District Council	J. P. Spencer, C.E., Newcastle-on-Tyne
Pudsey-Residence, &c.	Cricket Club	E. W. Mountford, F.R.I.B.A., 17, Buckingham-st., Strand, W.C.
Minster-Laundry Buildings at Workhouse	Urban District Council	Frank Bellis, Architect, Bangor
Ilkley-Baths, &c.	Urban District Council	W. A. Longmore, F.R.I.B.A., Hoe-street, Walthamstow
Castleford-Four Houses, Morrison-street	Urban District Council	The City Surveyor's Office, Manchester
Hull-Stratton Hall, Cottingham-road	Urban District Council	R. Eccles Buchanan, Architect, Castle-street, Londonderry
Ossett-School at First Baptist Church	Trevelthick School Board	W. H. Bradwell, Secretary, Thurland-street, Nottingham
Donegal-Renovating Business Premises at Diamond	Urban District Council	G. F. Geoghegan, Secretary, 32, Prince of Wales-road, Norwich
Barnford-Offices	Urban District Council	Samuel Dyer, Architect, Bridlington
Wrexham-County School Buildings	Urban District Council	Jno. Thomson, Solicitor, Stanhope
Cardiff-Electric Tramway Power Station	Urban District Council	James Darbyshire, Secretary, Acnington
Middlesbrough-Bank, Exchange-place	Urban District Council	J. Robertson, Estate Office, Newtyle
Banagher-Improvements to Parish Church	Urban District Council	J. H. Crowther, Engineer, Great Fleet, near Birkenhead
Whitley-Bathing Place	Urban District Council	Faxton Watson, Architect, 1, Adam-street, Adelphi
Sheffield-Administrative Block at Fir Vale Infirmary	Urban District Council	Lansdowne and Griggs, Architects, Newport, Mon.
Caerwreile-Lock-ups and Magistrates' Room	Urban District Council	J. H. Crowther, Engineer, Great Fleet, near Birkenhead
Walthamstow-Four Shops and Office Premises, Wood-street	Urban District Council	Rev. Grawys Jones Bryngafel, Treconon, Aberystwyth
Manchester-Tramway Office, &c.	Urban District Council	Thomas Winn and Son, Architects, 92, Albion-street, Leeds
Buncrana-New Chapel at Church	Urban District Council	A. Wyllie, Electrical Engineer, Wolverhampton-street, Walsall
Nottingham-Shedding, &c., Colwick Park	Urban District Council	Thos. Wm. Cotman, Architect, Northgate-street, Ipswich
Great Yarmouth-Cold Storage Premises	Urban District Council	J. H. Crowther, Engineer, Great Fleet, near Birkenhead
Bridlington-Wesleyan Chapel, Ulrome	Urban District Council	J. T. Sworder, Clerk, Workhouse, Welwyn
Stanhope-Town Hall	Urban District Council	The Secretary, Waterworks Office, Town Hall, Manchester
Accrington-Grand Stand, and Boarding-Round Cricket Field	Urban District Council	G. K. Mills, Secretary, Paddington Station
Newtyle-United Free Church	Urban District Council	Frederick Stevens, Town Clerk, Town Hall, Bradford
Wallasey-Car-Sheds, &c., Seaview-road	Urban District Council	The Secretary, Waterworks Office, Town Hall, Manchester
Farnham-Council Offices, Fire Station, &c.	Urban District Council	John O'Neill, Clerk, North Brunswick-street, Dublin
Pontnewynydd-Board School (775 places)	Urban District Council	W. B. Seldon, Town Clerk, Bideford
Wallasey-Extension of Engine-House	Urban District Council	J. Llewellyn Smith, Architect, 60, High-street, Merthyr Tydfil
Aberdare-Additions to Ebenezer Congregational Chapel	Urban District Council	J. Alex. M'Connell, Secretary, Estate Office, Downpatrick
Leeds-Black Swan Licensed Premises	Urban District Council	The Architect's Office, Doldremond, Lampeter
Walsall-Enlarging Electricity Generating Station	Urban District Council	W. H. Hardick, Architect, Warmistons
Felixstowe-Balmoral Hotel (200 rooms)	Urban District Council	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
Wallasey-Engine and Pump House, Seaview-road	Urban District Council	Henry William, Architect, 24, Clare-street, Bristol
Welwyn-Additional Infirmary Wards at Workhouse	Urban District Council	J. E. Sharkie, Clerk, Strabane
Pendlebury-Inspector's Cottage and Store	Urban District Council	Church, Quick, and Whincop, Architects, 57, William-street, Woolwich
Wootton Bassett-Passenger Station	Urban District Council	Edwin T. Hall, F.R.I.B.A., Architect, 57, Moorgate-street, E.C.
Bradford-Generating Station, Valley-road	Urban District Council	The Vicarage, St. John's Church, Highbury Vale, N.
Worsley-Inspector's Cottage and Store	Urban District Council	Teather and Wilson, Architects, Andrew's Buildings, Queen-st., Cardiff
Hrowth-Fourteen Labourers' Cottages	Urban District Council	F. W. Croft, Archt., Victoria Chambers, Victoria-st., St. Grimsby.
Bideford-Caretaker's Cottage at Reservoir	Urban District Council	Hunter and Woodhouse, Architects, Belper
Rhymney, Mon-Nineteen Villas	Urban District Council	W. Ralph Low, Architect, 10, Basinghall-street, E.C.
Downpatrick-Rectory	Urban District Council	D. L. Jones, Architect, West End, Llanelli
Fishguard-School Buildings	Urban District Council	Johnstone Bros., Architects, 39, Lowther-street, Carlisle
Warmistons-Technical Schools	Urban District Council	Ernest Oxley, M.S.A., Architect, Clay Cross, Derbyshire
Bushey Park-National Physical Laboratory	Urban District Council	Burton and Percival, Architects, 150A, Stamford-st., Ashton-on-Lyne
Bristol-Superstructure of Avonbank Electricity Works	Urban District Council	George Waller, Architect, Middlegate-street, Great Yarmouth
Strabane-Fifteen Cottages	Urban District Council	A. F. Newsome, M.S.A., Architect, Albert-road, Middlesbrough
Bostall Heath, Plumstead-Cottage Homes	Urban District Council	J. Rider Hunt, Esq., Queen Victoria-street, E.C.
Camberwell, S.E.-Infirmary Extension, Brunswick-square	Urban District Council	Ernest Oxley, M.S.A., Architect, Clay Cross, Derbyshire
Highbury Vale, N.-Repairing Stonework of St. John's Church	Urban District Council	Albert E. Dixson, A.R.I.B.A., Architect, 5, Park-lane, Leeds
Llanbradach-Hotel	Urban District Council	A. F. Newsome, M.S.A., Architect, Albert-road, Middlesbrough
Cleethorpes-School, Bursar-street	Urban District Council	Ernest Oxley, M.S.A., Architect, Clay Cross, Derbyshire
Belper-Extension to Wards, &c., Isolation Hospital	Urban District Council	Bland and Bowa, Architects, Harrogate
Feltham-Infant School, Cardinal Estate	Urban District Council	A. F. Newsome, M.S.A., Architect, Albert-road, Middlesbrough
Gorseion-Baptist Chapel	Urban District Council	Thos. A. Welford, Clerk, Sealing, Loftus, R.S.O.
Scotby-Villa, Copse-hill	Urban District Council	J. W. Start, F.S.I., Architect, Colchester
Clay Cross-Six Pairs of Houses	Urban District Council	Brooks and Pickup's Offices, Pontefract-lane, Leeds
Audenshaw-Wesleyan School, Hooley Hill	Urban District Council	A. F. Newsome, M.S.A., Architect, Albert-road, Middlesbrough
Great Yarmouth-Fishing Premises on South Denes	Urban District Council	J. M. Fawcett and Son, Architects, 28, Albion-street, Leeds
Middlesbrough-Alterations to Business Premises, Newport-rd.	Urban District Council	J. W. Start, F.S.I., Architect, Colchester
Stifford, Essex-Schools and Cottage Homes	Urban District Council	Alex. Gordon, M.S.A., Architect, 107, Queen Victoria-street, E.C.
Clay Cross-Dwelling-House	Urban District Council	
Leeds-Enlargement of Crown Works, Harehills-road	Urban District Council	
Middlesbrough-Additions to Villa, Loftus	Urban District Council	
Alton-Dwelling-House	Urban District Council	
Grantley-Entrance Lodge, Cottages, Laundry, &c.	Urban District Council	
Middlesbrough-Alterations to Business Premises, Albert-road	Urban District Council	
Easington-Sealing Board School	Urban District Council	
Dovercourt-Restaurant and Private Hotel	Urban District Council	
Leeds-Colliery Workshop	Urban District Council	
Middlesbrough-Semi-Detached Villas, Phillipsville Estate	Urban District Council	
Sherburn-in-Elmet-House	Urban District Council	
Colchester-Six Houses, Harsnett-road	Urban District Council	
London, E.C.-Warehouse Block, Old-street	Urban District Council	

THE BUILDING NEWS

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DWELLINGS FOR THE LABOURING CLASSES.

THE County Council election for London has awakened an interest in the Housing of the Working Classes. Candidates on each side proclaim the importance of the theme—one side pointing to the progress that has been made, the other to the mistakes committed, and to the need of considering the question from another standpoint. It may be useful, therefore, at this juncture, to take stock of what has been done, what has been the results of legislation on the question, and how far the action of the old and new authorities has been beneficial or has realised expectations. Though progress has been made since the late Metropolitan Board of Works' rule came to an end, the problem has not been solved. Before that time, sites were disposed of to companies to erect dwellings; but since the Council have taken the matter in hand themselves, one of the chief difficulties has been of a financial kind. The regulation that the money borrowed for housing schemes should be repaid within sixty years has made it necessary to fall back on the ratepayers, and to charge rentals that cannot be paid. The magnitude of the work carried out and in progress can only be appreciated by the report lately published, and by the fact that over 30,000 people have been housed. The announcement made in the *Times* of Monday, that the County Council have a scheme prepared and adopted, to spend a million and a half on dwellings for the working classes, is startling; but, surprising as it is, the problem has to be faced. The pressure for house accommodation is getting greater, notwithstanding all that has been done, for we have the fact that dwellings are filled as soon as they are built, and the working classes seem to be no better off than formerly. If we could stop immigration from the country districts and from abroad, we might cure the evil at the root; but since we cannot do that we must provide accommodation. Unfortunately, the grievance goes on. When we have cleared one area of unhealthy houses, we have only removed the plague-spot a little further, while the new dwellings erected, by their increased rental, are inhabited by a totally different class to those displaced and for whom they were built. Here we have the *crux* of the matter. The people that we tried to house have been driven into worse slums, or have gone into the suburbs to make life unpleasant. Take the suburbs, for instance, in the north and north-east of London, which are described "to be as bad as the worse parts of Bethnal Green and Shoreditch." It is too true that the mass of the poor cannot pay the rents which the County Council demand to pay the interest on the capital invested in the land. As they can fill their dwellings with tenants who can pay, they continue to build, but not for the class intended by the Act. From a building and architectural point of view, we are met also by the difficulty, How are we to erect dwellings for this very poor class that are to be anything better than mere huts, or without building blocks of piled-up stories?

Let us deal with actual facts and experiences. The increasing number of people of the poorer class that now swell the more crowded districts, partly owing to street improvements and the demolition of old and insanitary houses, forces this question to the very forefront of municipal matters. If the improvement in the health and conditions of

our huge population is to be maintained, large areas of dwellings or flats will have to be built before long. Mr. Charles Booth, in his address at the Westminster Palace Hotel, has struck the keynote of the situation: a cheap and rapid system of transportation radiating from the congested centres, removing a portion at least of the surplus population to a less dense neighbourhood—unless, indeed, we could provide the areas in or near the centres of work. We should gladly welcome any scheme for keeping these classes near their work; but we have to face the unpleasant alternative in such case of concentrating hundreds of families in blocks of associated dwellings, and thereby creating a state of things worse in some respects than that of the old areas. The many-storied block has not been favourably entertained by the classes for whom they were built, and those erected are largely tenanted by men with small families and earning higher wages. Removal from the centre of the congested district is therefore one of the few feasible projects that has to be considered. It has several drawbacks: it entails removal from the scene of daily labour, the daily travel to and from the work with its many inconveniences; the cost and delay to the working man, the spoliation and destruction of many of the most beautiful suburbs, by the erection of colonies of small tenements, and new railways and tramlines, and other evils, such as the deterioration of residential property. These are matters that have to be faced if the facilities of locomotion are contemplated. A network of cheap and rapid locomotion is a double-edged tool, as we know what tramway extension has done in some quarters to spoil the districts traversed. Yet circumstances are compelling us to take this course. If we are to avoid congestion and unhealthy areas, we must extend the areas of our towns by spreading the population over a larger area; we must do this or concentrate by raising the height of our buildings—an alternative strangely out of accord with the teaching of sanitary science and the principles of hygiene. A complete system of railways underground and overhead is contemplated by such a scheme, and is one of the inevitable conditions of a fast-growing metropolis.

The action taken by the Council under recent Acts to meet the demand for dwellings has been brought about by various causes, one of which is the land required for commercial purposes, factories and warehouses, which are yearly extending outwards. Building in this direction has been prodigious during the last few years. Small house property has been swallowed up or demolished, and builders have not found it profitable to pay the commercial value of land in such parts for building working-class dwellings. In other parts the small dwellings have been pulled down to make room for flats and mansions for another class. Then the rise of ground-rents and the cost of building have had a similar effect—to make it impossible to erect dwellings for the working classes in the central districts that will be remunerative. These causes have operated to lessen the number of working-class dwellings in the central parts of London. Central areas are naturally of great value, and none but commercial buildings will pay. These hindrances to the erection of dwellings in the central districts were seen years ago—after the Housing of the Working Classes Act, 1890—and several recommendations were made, which were eventually adopted. One of these was, that housing accommodation should be provided for the same number of persons as those displaced by any scheme under that Act, but not necessarily in the immediate neighbourhood of the displacement, consideration being given to the needs of those living in any particular area, a register to be kept of such persons displaced, who were to have the first

refusal of a tenancy. The Council also approved of action being taken under Part III. of the Act, with a view to the purchase of land and the erection of dwellings thereon, and of purchasing or leasing suitable houses built or provided for the supply of accommodation. There were difficulties in the way of acquiring land outside the county for these dwellings. The Council, in fact, had no power for this purpose under the Act; but this has been remedied by the Housing Act of 1900, which extended the powers of Part III., so that land may be acquired outside the area. We may now briefly describe the last Act as it applies to the Metropolis. The Council may, by section 1, establish or acquire lodging-houses for the working classes under part III. of the Act of 1890 outside the limits of the county. Under section 3 the metropolitan borough councils have power to borrow money for carrying Part III. of the same Act into effect, either inside or outside the borough. Under section 5 the Council, or any borough council, with consent of Secretary of State, may lease any land acquired by it under and for the purposes of Part III. of the Act to any lessee under the condition that he will carry the Act into execution by building and maintaining on the land lodging-houses within the meaning of the Act. These are the main provisions that affect building of lodging-houses under the Act of 1900.

The legislation in force has been the result of many years' experience, thought, and discussion, and the history of the housing question in London, as detailed in the Report lately published under the direction of Mr. C. J. Stewart, late clerk to the Council, lately noticed in these pages, is interesting and instructive, as showing how frequently the best devised schemes have often failed in practice. The Housing Act of 1890, to which we have referred, was practically a consolidation of previous Acts, such as those of Cross and Torrens. An official representation by the Council's medical officer that a certain area is insanitary sets the ball rolling; or he may make the representation upon complaint by two justices, or by twelve or more ratepayers. Upon this representation an improvement scheme can be prepared, which must provide for the opening out of the area for purposes of ventilation, &c. Lands can be compulsorily acquired for this purpose, and the scheme must provide for the rehousing of at least as many persons of the working class as will be displaced, and within the area or vicinity, or other lands purchased by agreement. Should the Secretary of State approve the scheme, he holds an inquiry by a commissioner as to the merits of the same, and he may thereupon issue a provisional order. The plans of dwellings have to be approved by the same State official before they are carried out. The acquirement of the land, the demolition of the old property thereon; the laying out paving, sewerage, and building are steps that take some time, and the Act also empowers the Council to make arrangements for the erection of buildings under the scheme, or may, with the consent of the Secretary of State, undertake their erection, and these dwellings are to be sold on the expiration of ten years. These, in brief, are the main features of legislation. The rules for assessing compensation are to be based, first, on the rental which would have been obtainable if the house or premises were legally occupied, and only by the number of persons whom the house was fitted to accommodate without overcrowding or dangerous to health; secondly, the compensation shall be the amount estimated as the value of the house or premises if the nuisance had been abated, or if they had been put into a sanitary condition, or into reasonably good repair, after deducting the estimated cost of abating the nuisance or putting them into repair, as the case may be; and, thirdly,

on the value of the land and of the materials of buildings thereon. Compensation thus arrived at has to a large extent made it impossible for designing owners of houses illegally used, or in a very unsanitary and overcrowded condition, to obtain large sums, and has checked those who have made capital out of buildings in a disreputable condition. Another part of the Act provides for the purchase and demolition of obstructive buildings that stop ventilation, or otherwise make other buildings unfit for habitation or injurious to health, &c. (section 38), and deals with dwellings unfit for habitation, and orders demolition if owner fails to complete repairs; while Part III., already noticed, consolidates and amends the provisions of the Lodging Houses Acts, 1851 and 1867. As we have before said, the Council is now empowered to establish or acquire lodging-houses outside the limits of the county, and the borough councils may borrow money for the purpose of carrying out this part of the Act of 1890 outside as well as inside the borough.

As to the question of the kind of dwellings, opinions differ, and the dwellings already erected by the London County Council are more or less experimental. The Boundary-street scheme, Bethnal-green, to which we lately referred, is one of the more important and typical of the schemes undertaken by the Council under Part I. of the Housing Act of 1890. This unhealthy area of narrow streets and courts contained about 2½ persons per room, many rooms having five or more in each, and a large proportion of the area was occupied by persons of the criminal class. It goes without saying that the death-rate in the represented area greatly exceeded that of Bethnal Green itself, the general mortality being 40·13 per 1,000 as against 22·8, while the deaths from zymotic and tubercular diseases were about double that of the neighbourhood. The scheme displaced nearly 6,000 working-class persons, and rehoused 5,000 of the same class. The plans of the buildings erected vary in accommodation. In one block there are 32 tenements; 7 of these have two rooms, 12 have three rooms, 12 have four rooms, and 1 five rooms in each. Baths, hot and cold supply, are provided on each floor, and the rents vary from 6s. 6d. to 13s. per week. Workshops are provided in the rear of the block. Shops are also provided in some of the frontages. The plan shows a well-broken group of tenements. Taking one end of a block on the first floor, there is a four-roomed tenement, or three bedrooms opening out of a large living-room; two other tenements—a three-roomed and a two-roomed—are entered by a corridor which runs between the end block described and another, and on the inside of corridor we have the staircase and four w.c.'s, and small scullery for use in common, forming a projecting break. In another instance there are blocks of one-roomed and two-roomed tenements of similar arrangement, stairs and closets being on one side of corridor, and forming a projection. The principle in most of the blocks appears to be the same. The suites of rooms on each floor are arranged along long and short corridors which terminate in larger tenements at the ends. The other side of corridor has the staircase, closets, and sculleries, which form a break. Tenements of two and three rooms let from 6s. 6d. to 12s. 6d. per week. Some of the better tenements are self-contained, and have each a private w.c., and private scullery outside the tenement. These buildings at least exhibit a regard for the amenities of life. Architectural appearance has been studied in many of them, as in the Molesey Buildings, the Cleeve, and the Marlow, Shipplate, Wargrave, and other buildings, by breaking the external walls round the end blocks, by projecting bay windows to the living-rooms, thus giving them prominence. The angles, whether acute or

otherwise, and the junction of corridors have also been planned for effect, instead of being left to accident, as is often the case. The least expensive of these dwellings are, however, beyond the classes to be reached. Single and two-roomed tenements, with rents from about 2s. to 3s., all appear to be demanded. One Trust provides rooms at 2s. 1½d. each, and this rent includes baths, hot and cold water, laundries, club rooms, and coster sheds. If the County Council can erect dwellings of this class in well selected areas, they would be meeting a great demand, and be removing the reproach that only private munificence or Government can adequately undertake the work. A scheme has been submitted to the L.C.C. for acquiring and laying out an estate at Tottenham of 225 acres in two detached portions. It is about six miles from London. Accommodation for 33,000 will be provided in 4,750 self-contained two-story cottages, and 2,000 more will be provided for in tenements over shops, and there will be 250 shops. Advantage is to be taken of the river Moselle which runs through the estate to lay out gardens. The estimated cost is £1,530,858. This is an important proposal, and the idea of self-contained two-story cottages is excellent.

A "PUBLIC BUILDING" DECISION.

THE term "public building" has been defined in the London Building Act in section 5 (27) as follows:—"The expression 'public building' means a building used, or constructed, or adapted to be used as a church, chapel, or other place of public worship, or as a school, college, or place of instruction (not being merely a dwelling-house so used), or as a hospital, workhouse, public theatre, public hall, public concert-room, public ballroom, public lecture-room, public library or public exhibition-room, or as a public place of assembly, or used or constructed or adapted to be used for any other public purpose; also a building used, constructed, or adapted to be used, as an hotel, lodging-house, home, refuge, or shelter, where such building extends to more than 250,000c.ft., or has sleeping accommodation for more than 100 persons." So apparently comprehensive a definition has been shown not to be inclusive of all buildings used in the public interest. The terms of the definition appear to exclude certain buildings used as homes having a less cubical capacity than 250,000ft., or having sleeping accommodation for under one hundred persons; so that, in point of fact, a great many houses of a semi-public character, in which the public only took an interest, would be outside the Act. The important appeal case of "Moses v. Marsland," reported in this journal, illustrates this position. The Metropolitan Asylum District Managers have, under a Local Government Board order, the care of children who, from defect of intellect or physical infirmity, cannot be trained in ordinary schools. A scheme was framed for the purchase of dwelling-houses for lodging these children, and No. 16, Elm-grove, Camberwell, was purchased. Plans were prepared for alterations to the house to provide for a cubical capacity of 50,000ft. The plans were submitted to the district surveyor under sections 68 and 79, and presumably therefore as a public building; but when the district surveyors' requirements were made, the promoters contended that the building was not "public." When the case came before the magistrate, the learned stipendiary decided that the building was under control of the Metropolitan Asylums District managers, and was adapted to be used for a public purpose. In confirmation, the 5th section, 27 subsection, we have quoted above was pleaded, and it was contended by the counsel for the respondent that the building was *ejusdem generis*

with a hospital, and therefore within the term "building used &c., for any other public purpose." But the Court allowed the appeal, and the opinions expressed by Justices Bruce and Phillimore are so important that we refer to them here. Mr. Justice Bruce gave his opinion that the building in question was not a "public building within the meaning of the Act," and he "disagreed with the contention that it was a hospital. Originally, the word hospital had a very wide meaning, and meant any place of lodging; but in these days it meant a place for the treatment of the sick and infirm; but the building in Elm-grove was not a hospital in that sense, nor was it within the section on the ground that it was a building used for 'any other public purpose.'" He went on to affirm that "the substance of the decision in 'Josolyne v. Meeson' was that the phrase 'public purpose' indicated not a place in which the public had an interest, but one where they could gain admission." A building used, moreover, "for any other public purpose," must be one used for a purpose *ejusdem generis* with those of the enumerated buildings, and would not include a house used for the purpose described. The building did not come within the term 'home,' because it had not a cubical capacity of 250,000c.ft., or sleeping accommodation for 100 persons. The magistrate therefore came to a wrong conclusion, and the appeal must be allowed." Mr. Justice Phillimore said also, the building was not a hospital in the modern sense of treating physical ailments. He showed that the building in question was provided for the reception of children who were incapable of being placed with ordinary children, and was really an adjunct to schools of the ordinary kind for receiving children for education and not for treatment, under the Elementary Education (Defective and Epileptic Children) Act, 1899. It was therefore in no sense a hospital. He also concurred in the opinion that the building did not come within the phrase "building used, &c., for any other public purpose." The words involved only admission of the public as a lecture-hall, and therefore he thought the building did not come within the terms of the section.

These opinions will have their weight in future decisions on this question, and will, no doubt, be often quoted. The term "public building" has long been a source of confusion and litigation. Though a building is a public building within the section we have quoted, it may be a dwelling-house within section 13 (5). In the amended definition of this term several words have been added to extend the meaning. Thus the words "or constructed or adapted to be used," extend considerably the application of the term as originally defined, and the latter clause of the term which applies it to "an hotel, lodging-house, home, refuge, or shelter, where such building extends to 250,000c.ft., or has sleeping accommodation for more than 100 persons," is one of the new clauses inserted. In the latter sentence the words lodging-house, home, refuge, extend the term public building to all those dwellings which are large enough to comply with the above cubical contents or accommodation; but it will be seen there must be thousands of such lodging-houses or homes which are within the limits and are therefore excluded. Any house of ordinary capacity which, nevertheless, receives adults or children for shelter or treatment, and to this extent is of public interest, is exempted. Thus a good-sized dwelling-house may be turned into a home or hospital measuring, say, 25ft. frontage, 100ft. in depth, and 60ft. in height, or more, that would still be within the capacity given, so long as it is not provided with more than one hundred beds. If we are to take the section, therefore, as it stands, a

very large number of buildings are excluded simply by their limits as to size or accommodation. The words of the definition—"not being merely a dwelling-house so used," after churches, chapels, school, college, or place of instruction—appears still more to limit the meaning of the term strictly to buildings intended to admit the public. The definition is not satisfactory, because it does not limit itself to function or use, but includes a class of buildings of over a certain size, such as lodging-houses, thus bringing in another and very different element. And it is also troublesome and vexatious. The district surveyor may be thwarted in the exercise of his duties by the technical objection that the building is not a public one, and the promoters are put to the expense and trouble of appealing against the magistrate's decision. What is still more objectionable is that buildings are converted or adapted to be used for purposes of accommodation without fulfilling the regulations imposed for public buildings under sections 78, 79, 80 as to walls, roofs, floors, and staircases, which render it necessary to inclose by brick walls every staircase, to provide certain widths for it and corridors, and means of exit, &c. The question raised affects largely houses converted into buildings intended to receive invalids and the infirm, also those used for school-buildings of inferior construction, insanitary, and combustible, intended at first for private families. These buildings are often without sufficient staircases and entrances; their floors are ill-adapted for the purpose of carrying a number of persons, and the sanitary condition inadequate for the intended use. The Building Act under these sections provides that houses converted shall be constructed in a manner to be approved by the district surveyor, or if there is disagreement, the questions are to be determined by the tribunal of appeal. The question, therefore, What constitutes a public building? lies at the basis of the inquiry, as upon it rests the operation of the law.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The eighth ordinary meeting of the present session of the Royal Institute of British Architects was held on Monday night, the President, Mr. WILLIAM EMERSON, in the chair. This being the annual prize distribution evening, many students and a number of ladies were present.

THE PRESIDENTIAL ADDRESS TO STUDENTS.

was, owing to the hoarseness from which Mr. Emerson was obviously suffering, read by the secretary, Mr. W. J. LOCKE. The President reminded his younger friends that it is of the highest universal importance that those practising it, on whose skill and taste its proper employment is dependent, should be so educated as to plan for use, to design with appropriate beauty, and to construct with scientific knowledge. To this end he had pointed out last year how a thorough education should not only be gained by study of man's work in the arts and sciences, but also by study of God's work in nature. There should be besides an inquisitive, diligent searching into the reasons of things. The constant use of our faculties in effort with application and judgment is essential, and our highest duty. Idleness will not compass proficiency. Architecture should be more than mere building in the best material and manner. The thought and needs of the time must be expressed. It does not suffice to satisfy the one only who has conceived it, but should be capable of pleasing all people in all times. Such a true expression of the architect's mind

Like the unchanging sun
Clears and improves whatever it shines upon:
It gilds all objects, but it alters none.

It is the divine element in man materialised in his works: his two natures, the human and the spiritual, are evidenced in his individual conceptions.

IN REAL ARCHITECTURE

there must be not merely the individual bias or

personality exhibited by one's particular devices, peculiarities, or the excellences of one's draughtsmanship: but there must be the expression in all sincerity of spiritual sentiment also. The artist's material personality or mechanical dexterity should not be predominant so much as the spiritual or divine influence inspiring him. If such be our aim, we shall rightly use any powers of architectural design with which we may be endowed, and be enabled to express the highest mind that is in us by the forms of which draughtsmanship will convey the conventional rendering. This habit of mind, combined with constant practice, care, and accuracy, will lead to dexterity of expression of feeling which is essential. But more than habit of mind for fitting expression in our art is necessary for successful practice. There should be habit of method in study, and attention to apparently trifling details, and in business conduct. For as to study it has been well said:

If not to some peculiar end designed
Study's the specious trifling of the mind.

As to the details and little points that constantly arise, if there is not the methodical habit of carefully looking into them, things seemingly insignificant are easily overlooked, resulting in endless trouble to both the client and the architect. In regard to habits of method in business, I believe that the men with methodical habits usually get through infinitely more work, and do it better and quicker than those lacking in this respect. Methodical habits tend to avoidance of worry, for an architect's life consists, to a large extent, of attention to details of all kinds, which should all have methodical attention in turn. And there is nothing so prejudicial to artistic effort as worry. It should be avoided in every way: a quiet and restful mind is essential to the right exercise of thought and creative power. Therefore the architect whose soul is in his art should strive by methodical habits and rules of business to render himself as impervious as possible to worry. Rules, no doubt, are irksome, and perhaps especially so to the artistic temperament; but without method or rule one is apt to be slovenly. One good rule is to encourage a habit or work every day, and this—however disinclined one may feel, and however little in the humour—with the effort to work the imagination will fire. It may be said the artist cannot work without the inspiration; but he can go on waiting so long for the inspired feeling that it may never come. An architect has this advantage in his life, that effort in the same groove does not recur each day; the variety of the claims upon his attention is one charm of his work. Cultivate earnestly methodical habits. I speak with some reason, the President naively interpolated, for I was never brought up with these habits, and have learned the great necessity of them, particularly to the architect. The importance in practice of study with thoroughness in both the theoretical and practical sides cannot be too strongly inculcated. There have been articles in some of the papers lately pointing out how, if England is to retain her position in trade and power, the highest intellectual education is necessary in all modern businesses. Not merely smartness or push is wanted, but intellect thoroughly trained, and of a type in which it is stated this country is woefully deficient. If it be true that in trade this highly-trained intellect is so essential, in how much greater degree must it be so for the profession of architecture? For beyond the mere business element, without which, to a certain extent, it is impossible for the architect to practise successfully, there is the necessity for a thorough knowledge of art, with much of many other subjects, such as science, history, &c., combined with the study necessary for the acquirement of that dexterity without which he cannot express his ideas. How superior the educational methods in regard to architecture are in America to those in this country has lately been shown in a most able manner by Mr. Arthur Cates. Therefore a serious reflection for the young student in this country is how very much his education must depend upon himself and his own exertions if his work is to be more than that of an amateur and have vital force, and if he wishes to succeed by his power and competency rather than by smartness and push, or playing off upon the public the eccentricities or fashions of the moment. The days of mere building by architects in this country are, we hope, fast passing away; and this century the public will demand, not only that the architect be versed in all practical details of his calling,

but that, by really cultivated taste and intellect, he may build with power, beauty, and perfect utilitarianism. But by those who wish to excel as artists time must be allowed for

THE STUDY OF NATURE.

The delicate tones of colour in the trees and herbage and sky, the perfection in drawing and beauty of colour in details of leaves, flowers, fruit, animals, birds, insects, &c., and the forms of fishes are lessons in decoration which should be learned at first hand. Deductions and inspirations innumerable may be gathered from them, with a freshness no study at second hand from man's work can give. Burges used constantly to make his pupils draw all sorts of flowers and insects and colour them, as well as study from the life in his office. Emerson says: "In every landscape the point of astonishment is the meeting of the sky and the earth, and that is seen from the first hillock as well as from the top of the Alleghenies." And what a truth is here! It is in the meeting of heaven and the earth, the spiritual and the material, that art is rendered capable of conveying sentiment and lessons. The study of Nature, no matter under what aspect, puts some germ of life, some sentiment, into the spirit of the artist, whether he be an architect, sculptor, painter, poet, or musician. Inconsistencies or vulgar eccentricities are never found in Nature, though infinite wonders are discoverable to the observant mind: and in its study one may learn all beauties of proportion, form, and colour.

HIGHER EDUCATION IS ABSOLUTELY NECESSARY.

if the status of the architect is to be raised. It should be remembered that doctors and barristers are almost always University men, and it will be well to bear in mind that the sooner it becomes the rule, rather than the exception, for architects to receive a higher, or perhaps a University education, the sooner will the acknowledged status of the profession be elevated. Then, for facility of practice, the architect should

CULTIVATE HIS MEMORY.

and as all cannot perform feats of memory, a practice of writing down useful information should form another habit. The architect in designing not only requires to remember details of old and other work, as a guide, incentive, or restraint to his own, but he must recollect endless details of construction and many specialities for building purposes necessary in modern structures; and this is no trivial matter. But, above all, he must remember the effect certain proportions, details, and compositions have given, in isolation or when in juxtaposition in former examples, ancient or modern. He will thus be enabled to reject or improve the crude, and profit by the excellent. Originality of design is not shown by the utilisation of forms which better and more cultivated men than ourselves have seen good reason to discard. An educated perceptive faculty and a good memory are necessary to realise the full teaching of past times. There is also, in connection with the practice of the art of architecture, such a word as

PROPORTION.

To the architect's mind may probably immediately be suggested the comparative relation of one architectural detail to another and to the whole composition. But besides the objective symmetry and harmonic degree of form or size, proportion may be considered by the architect in other ways. Of course, proportion in this sense is the very first essential of fine architecture. It should be an inherent faculty in the architect and artist, but it may be cultivated. It is by the proportions as much as—or even more than—by the beauty of detail that the mind is impressed by works like the Parthenon, the Pantheon, Westminster Abbey, Chartres Cathedral, the "Mercury" by Praxiteles, the "Venus de Milo," Michael Angelo's "Moses," or Cellini's "Perseus," or by the delicate refinement of the proportion of scale and relief in the decoration of the Villa Madama. And proportion must descend, also, to the smallest details.

PROPORTION IN COLOUR.

is also a most important factor in the excellence of artistic work. The study of Nature is the guide as to how much of any one colour will harmonise with another. How often is work spoiled by the introduction of too much colour or by its tone—by the coldness or excess of blue, or the foxiness of too much red, or the unpleasant-

ness of a superabundance of yellow. Such faults never occur in nature. The Owen Jones prize is given as an incentive to study of colour in reference to architecture. It might well include in the students' works studies from nature. It seems a pity that a greater proportion of colour cannot be effectively introduced in the buildings of our towns, which are usually so fearsome in their sombre dullness. But there can be no doubt much colour in buildings requires a bright sunshine, as in Greece, Egypt, and India, to give it its true value. Nevertheless we might be a little more cheerful in our streets with some advantage. There is also a proportion in architectural work, which requires to be maintained, between coarseness and refinement. This is a very subtle point in all good work. Too much refinement in architectural work tends to weakness of effect, and deprives it of its masculinity. At the other extreme, "muscular" architecture may degenerate into coarseness. It is the carefully balanced proportion between these that avoids either extreme. The effect of all the finest architecture has been attained by a combination of strength and power with refinement of well-proportioned and beautiful detail. Too much care cannot be bestowed on the proportion that sculptured and other decorations bear, first, to the whole composition, and, secondly, to each other. They either give scale or destroy it. They either adorn it or make it appear tawdry. In all this the architect's should be the guiding spirit, however much may be done by the craftsman or sculptor. Then there is the proportion that the worship of one's art should bear to one's life. It is often said, as if it were the greatest praise, "He lives solely for his art." This could scarcely be said of any truly great man. It is too circumscribing and belittling. The larger the environment the greater the sphere of usefulness in life, and so long as the time occupied in other affairs is not out of proportion to the valuable hours necessary to one's life's work, mingling with others and doing work in other ways enlarges the mind, is our moral duty, and should benefit our art. Success is an object in life, but need not involve a want of sympathy with others, nor pushing on self, regardless of their claims, nor flinging on one side all other considerations on the road. Success in the practice of an architect, as in other callings, should be aided by a proportionate feeling sympathetic with a life full of effort and enthusiasm. Nevertheless, success in the art of architecture should be the settled purpose of him who proposes to practise, and that to the fullest extent, "in proportion to his being a human being, living his life amongst his fellow-creatures, to whom he can impart or derive something. The aim of culture is to make us better company as men and women in the world." The greatest men, like Michael Angelo, Donatello, Cellini, and Goethe, were all men of other affairs besides their art, and were in sympathy with their surroundings of thought, work, and politics. There is also a proportion that should be observed between

THE IDEAL AND THE SENTIMENTAL.

The one is the spiritual in our art, the other the simply sensuous. There should be a proper proportion maintained between artistic sentiment and practical purpose. The man who sacrifices the purpose to the art is not a useful member of the community. While he who sacrifices his art altogether to utility does not elevate the community. It is the correct judgment weighing the proportionate values of the one and the other which makes the architect. It has been said the aim of the ancient philosophies was to raise man above common notions of happiness, an endeavour to crush his humanity and develop his divinity, to make him happy by refinement of mind and soul and by the ignoring of his material pleasures—meaning complete self-denial, not so much for the benefit of humanity at large as for the individual's own exaltation. The Baconian philosophy which marked the beginning of the great strides in science and utilitarianism that have taken place during the last century was very different. It taught that nothing can be beneath our attention that may minister to the physical or material benefit of mankind. The first was grand, but scarcely attainable, or alone desirable for our human natures; the second was attainable and useful to man as he is. So the art part of architecture, the soul of it, a most potent factor in mental pleasure, is for the satisfaction of the divine side of humanity, but alone it does not altogether satisfy the requirements of humanity; the utilitarian side of architecture is also most

necessary for the satisfaction of our physical needs. In architecture it is the hopeful spirit of the men of imagination coupled with practical common sense, a level brain and a cultivated taste that is wanted to weigh well the boundaries of the respective values of a practical idealism and a maudlin sentimentalism. Then there is the necessity for a proper proportion being maintained between work and rest. There is such a thing as staleness. The want of recreation makes a man dull, unfit for companionship or sympathetic mingling with or interest in his fellows, and his work suffers in consequence. Also, there must be margin for reflection and thought. Great achievements usually germinate in quiet moments. An overworked brain and no physical activity or recreation must have a bad result both on a man's work and his life. So time should be proportioned that there is leisure both for light reading, the study of nature, and for recreation; then there will be freshness and vigour in your work. And if you always aim above your mark, and remember that what you do should not only be for your own personal satisfaction, but for that of others and for future generations, your restful moments may benefit the world. Then of much importance in connection with the practice of the architect, as in all other businesses in life, there is another thing that must be borne in mind, and that is

RIGHT PRINCIPLE.

This in architecture will mean an avoidance of shams and false construction, which somehow always manage to look wrong, even though worked on such a grand scale as the external walls of St. Paul's, or the impudent ugliness of our shops with stone façades, apparently standing on nothing. Truth makes work look consistent and correct; lack of it offends good taste. Palatial decorations in offices, ecclesiastical embellishments in restaurants, the affectation of a cottage simplicity in a palace, or *vice versa*, imply a want of appreciation of the fitness of things, and are wrong in principle; and this element of truthful principle in architectural art should be carried down to the smallest detail, if the work is to live. Then there should be right principle in your motive of action, and this a most important point if you desire not only your personal position to be respected by others, but also wish to uphold the dignity and status of your profession generally. Professional respect must ever depend on the character, conduct, and aims of the units in the profession. Each individual has his own particular influence on the appreciation with which his profession as a whole is viewed by the public. Dubious transactions entered into for the sake of emolument, a too great regard for personal advantage, or a disregard of the interests of others, tend to acts lowering to the profession. On this ground there should be due consideration before entering into competitions. See at least that the conditions are not derogatory to the dignity of a great profession, and see that they are fair as much in your competitor's as your own interests; and let no unworthy thoughts of possible interest or influence induce an activity which in the long run not only must be disadvantageous to you personally, but also detrimental to the profession as a body. The highest principles of morality should be the guide in professional practice, not only in regard to art, but also in all dealings with employers, contractors, tradesmen, craftsmen, and others with whom business relations bring you in contact. Work cannot be obtained without employers, nor carried out without tradesmen and labour of all sorts, and your success is bound up with these; therefore it is to your interest to treat all with a high-minded, unsparring sympathy. The architect should, on principle, enrich his mind and render himself proficient in all branches of his work, as his duty to his clients, and should deal fairly and avoid harshness in dealing with those over whom he is set as a supervisor. A high principle in these directions would avoid much of the litigation and many of the unsatisfactory arbitrations so constantly arising. It wants a kindly spirit united to a firm will—the iron hand in the velvet glove—to perform all an architect's duties in the highest manner, and to render himself and his profession honoured and respected by the public and those with whom he has business. Always remember the words—

Thy credit wary keep, 'tis quickly gone,
Being got by many actions, lost by one.

and our reputations are the immortal part of our-

selves. Principle also should not only lead you to strive after success in your own practice, which is, of course, your high duty to yourself, but also to aim at helping others who may have less experience or knowledge than you have, and thus assist in elevating your profession. With this view you cannot interest yourself too much in the work of this Institute, whose objects are to encourage the art of architecture, to uphold the interests of the profession, and improve its status. This obligation will be the best served by a high-minded way of looking at all sides of thought, and by cultivating broadness of views in our art of architecture, with a proper consideration for the sentiments of others, and not by the pushing forward of any particular school or clique. In combination we are strong; separated we are comparatively weak. There is room in this Institute for architects who are capable and honest in their views and endeavours, and the wider the circle of thought it enfolds, the greater the sphere of its usefulness will be, and the more it will foster education and dispel ignorance, and maintain the reasonable humility that should distinguish all those who claim to be artists; for, as Prior says:

By ignorance is pride increased:
They most assume who know the least.

REVIEW OF WORKS SUBMITTED FOR PRIZES AND STUDENTSHIPS, 1900.

Mr. J. ALFRED GOTCH, F.S.A., F.R.I.B.A., of Kettering, read a paper on this subject, in which he remarked that there would be one novelty, at any rate, in the criticisms springing from the, he believed, unprecedented fact of the critic having read the essays. An essay such as the Institute seeks should, he remarked, first of all, have some literary merit, always granted, of course, that it deals adequately with the subject in hand. The subject should be handled in a manner broad and yet pointed. So, too, with the illustrations, they should be to the point also; they should elucidate and enforce the arguments and the statements of the text. Give us portraits of Caesar by all means, but do not throw in portraits of his distant relatives who have nothing to do with the story. But, to be of any use, the essay must have life, it must be readable. To be readable it need not be flippant, but it must not be dull. Too much learning has a tendency to overwhelm the author, as the knight was smothered in his armour; and when you go to the Wallace Collection, you wonder how so many escaped suffocation. Allusions and quotations there should be, but not so recondite as to offend the less informed reader, and humour should be there, but quite subdued. Like the onion in Sydney Smith's salad, it should

lurk within the bowl,
And, unsuspected, animate the whole.

Of the essays submitted this year one was readable and to the point, but had no illustrations; another had less of the first two qualities, but had many illustrations, some of which, however, were beside the mark; the third was fairly to the point, but for its style, as Holofernes said of the poetry in Don Armado's verses, "for the elegance, facility, and golden cadence, *carol*." One sometimes wonders why there are not more essays submitted, and why their quality is not better. It is a matter worthy of reflection, for, taking us architects as a whole, we are singularly lacking in literary style and in the facility for expressing ourselves in a manner at once attractive, elegant, and lucid. The next subject in the order of the official list is that of

MEASURED DRAWINGS

of ancient buildings, of which eight sets were submitted. It is a significant sign of the times that one of the prizes should be taken by drawings of a building so late in date as St. John's, Westminster, and that the silver medal and the other prize should have gone to those of Elizabethan houses, leaving what Gothic buildings there were without reward. But the justice of the award will hardly be questioned even by the unsuccessful competitors. The Gothic drawings were hardly up to the requisite standard in two of the cases; whilst the third presented such an intricate mixture of small scale, large scale, and full-size drawings on every sheet that the mind reeled in the endeavour to unravel them. It is curious that the Silver Medal and one of the others have been given to drawings of two buildings in the same county—Kirby Hall and Burghley House—both of them masterpieces of the Elizabethan period. I should be the last to quarrel with this selection,

whether of the students or the Council, but I should greatly regret to see Gothic work disappear, even temporarily, from this competition. So far as mere draughtsmanship goes, its study is even more arduous than that of Elizabethan work. It is to be hoped that the taste of the rising generation in selecting subjects of study will be as catholic as ever. Although not next on the official list, it will be convenient to take the allied subjects of the two studentships next in order, and first for

THE PUGIN STUDENTSHIP

—perhaps the most fascinating of all the prizes offered by the Institute. For it is earned, not by laborious plodding in a dull office, not by a consideration of dreary formulæ, or a study of the wants of man in his various capacities as the user of a club, or a stroller in a park, or a foot-passenger desirous of crossing a stream, but in delightful journeys from one village to another, either in our own richly-endowed land, "Or by the lazy Scheidt or wandering Po": journeys in which every sketch has its own memory—the quiet of a country church, the gloom of a castle guard-room, the rain pattering on lead roofs, the sun drawing shadows across lichen-covered walls, amid the scent of old-fashioned flowers and the hum of the distant reaper. That is how the Pugin is earned, and it is spent in a more systematic prolongation of the same delights. Yet, after all, the Pugin is only a means to an end. Its object is not merely to make young men facile sketchers, but to lead them, through the observation of the work of the men of old, to do their own better. The winner this year, Mr. Cotman, has worthily won the prize. There is a variety of subject and of treatment about his sketches such as none of the other competitors attain. His perspective is accurate; his figures are delightful. He attacks the Gothic work of Lincoln Cathedral with as much address as the Renaissance of the council chamber at Oudenarde. Not only does he give us finished drawings, but, what is more important, pages from his sketch-books just as they left his hand. In this respect the other two prize-winners, Mr. Forbes-Smith and Mr. Pitcher, are shortcomers. Their sketches are clever, and the subjects are varied; but of that intimate relation between the hand and the book which tells us so much we see little. Mr. Shirley Harrison's sketches are free, clever, and accurate, but they are, as it were, his speeches, not his homely talk. The same may be said of Mr. Cook's drawings, which also are excellent. Of the other sketches some are too laboured, and others hardly strong enough. There is one thing which I should like to see practised more than it is, and that is sketching in ink instead of pencil. Its tendency is to induce accuracy—for there is no rubbing-out possible—and to impart a sure touch and vigorous handling. For

THE OWEN JONES STUDENTSHIP

there were six excellent sets of sketches submitted, and here again the winner of the studentship, Mr. Hervey Rutherford, was easily first in the variety of his work. Both in drawing and colouring his sketches were admirable; and it is satisfactory to find that in this competition, as well as in the Pugin, the quality of the studies tends to improve year by year rather than to deteriorate. I endeavoured to note those drawings which struck me as being the most pleasing or remarkable, but I find that in Mr. Rutherford's case I was obliged to say "all." The high standard attained in this competition is proved by the fact that, in addition to the studentship itself, there were three honourable mentions awarded, and out of the four prizes three go to Edinburgh. The three gentlemen who obtained honourable mention were Mr. Percy Nobbs, whose beautiful water-colour sketches of buildings were among his most pleasing contributions; Mr. Ramsay Traquair, whose best work came from abroad, and included some gay Spanish tiles, and some delightful intarsia panels from a church in Milan; and Mr. E. H. Bennett, whose facility with his brush was not surpassed by any of the others, nor his appreciation of colour; but the somewhat meretricious style which he adopted in his most important contributions undoubtedly told against him. They were very clever, but cleverness is only one of the factors which go to win a students' prize. It is highly important that this should be so, for there is a very general tendency to worship cleverness for its own sake, apart altogether from the nature of the thing upon which it may be bestowed. Clever drawings, like clever people, are sometimes both

shallow and disagreeable. There was one point among these colour sketches which afforded food for reflection, and that was that there were two representations of the same subject, an enamel plaque of Geoffrey Plantagenet, in which there were two entirely different versions of the colour. Which was the more correct rendering of the original it was, of course, impossible to say; but it was not difficult to decide which one *hoped* was the real colouring. So, too, of a panel from Ransworth Church. Mr. Rutherford had one version, and two of the Pugin competitors had each his own, and they all three differed from each other materially. It might, perhaps, be well for students, when engaged upon such work by themselves, to bear in mind that some other student may come along, and eventually exhibit the same subject on the same wall at the same time as the first comer. We now come to the three competitions which involve design as well as draughtsmanship, and of these the first is that for

THE SOANE MEDALLION.

Now, as there were twenty-two designs submitted for this, twenty-six for the Tite Certificate, and eighteen for the Grissell Medal, comprising a total of nearly 300 strainers, you will forgive me if I am unable to exhibit a very profound knowledge of the contents of each strainer. You will, perhaps, even go further, and forgive me if, of the sixty-six designs submitted, I do not mention all. Indeed, it was impossible to master the main points of every design, let alone the minutæ. This great increase in the number of designs submitted is very gratifying. We may conclude that it indicates among students an increasing interest in their work. Whether it also implies an increasing slackness of work in the respective offices to which they are attached I do not know. We may also say that with the increase of numbers the number of fairly good designs has proportionately increased. It is not merely the fringe that is longer, but the garment itself. At the same time, so far as the Soane is concerned, the increase has not produced the master-hand, and this competition must be pronounced disappointing on the whole. It is no secret that the reason which led the Council to withhold the medal was the absence of a really good plan, and it is of the utmost importance to impress upon young designers the vital necessity of a good plan. There was more than one design in which the plan was sacrificed for the preconceived necessities of the front façade. As a matter of fact, neither plan nor elevation should be preconceived—they should grow up together. It is quite as much from the influence of modern life upon the arrangement of our buildings as from the introduction of new materials that we may look for the characteristics of a latter-day style. It should be borne in mind that the money prize accompanying the Soane Medallion would represent a very fair premium even in a competition for an actual building. It is, therefore, worth taking as much pains for as if the Soane building were actually to be erected, and to perfect the designs of an important building actually to be erected no pains were excessive. But there is about the Soane competition an absence of enduring responsibility which surely ought to stimulate the imagination and prompt young men possessed of all the freshness and daring of youth to embody some of the lofty ideals which they must have conceived. Do we find much daring originality among the twenty-two designs submitted this year? I can hardly say we do. It is true that out of that number there are seventeen or eighteen which might be built without materially decreasing the sum of human happiness, so far as their external appearance is concerned. But is there one which could be regarded, even by the most enthusiastic, as epoch-making? However, we cannot reasonably expect a new epoch to be started every year, and although, from this particular point of view, my remarks may have been disparaging, yet, if we apply a more ordinary standard, there is something to gratify us in nearly all the designs. My own feeling is that the most poetic in conception is the design with the motto "Ars," by Mr. M. J. Dawson; but "Hiawatha" (Mr. H. M. Cantley) has a simple and dignified façade, and "Ionic" (Mr. J. B. Fulton) sends, as might be expected, an extremely fine set of drawings. The elevation of his front façade I thought the most attractive of the whole series; but the perspective brings out one or two weak features, particularly the long segmental pediments at either end, which spring from solid

abutments, but which are themselves too thin, being perhaps 12ft. or 15ft. long by 7in. or 8in. thick. As far as mere draughtsmanship goes, the competitors may be congratulated, for out of the twenty-two sets there are very few which would have to be excluded on this account, and quite half of them are as good as anyone could wish. They are in varying styles; two, which happened to be placed together, illustrate extreme examples. "Elsa" sends delicate pencil drawings, with all the detail very nicely put in, while his neighbour "Thor," like his somewhat boisterous namesake, has a heavy and determined hand, expressing itself in lines of amazing thickness. Nevertheless, there seemed to me to be a considerable amount of originality about the general disposition and some of the detail of "Thor's" elevation, and it had at least the distinction of not conforming to that particular rendering of Late Classic which is so much in vogue at present. In many of the sets there were various little bits of happy design, such as must have given pleasure in the producing, and will continue to give pleasure in the contemplating; and although no one succeeded in carrying off the medal, yet the mere fact of having attacked the problem, and endeavoured to solve it, will bring a certain amount of reward with it to all who really set their minds upon the task. Turning now to

THE TITE CERTIFICATE.

we find a subject requiring less elaborate preparation than the Soane, for an entrance gateway to a public park has less complicated requirements than a club. Either this fact or something else has attracted a large number of aspirants, and the result has been the production of a considerable number of passable designs and a few very good ones. The proportion, however, of those which, if erected, would give satisfaction, or, at any rate, fail to inspire regret, is not so large as in the case of the Soane, for here I can only conscientiously admit 14 out of the 26. The notions of what was intended by an entrance gateway to a public park appear to vary considerably among the competitors, as do the ideas of what the Tite Prize was founded for. It was founded for the study of Italian architecture, and how that can be reconciled with a design which consists, like "Le Nord's," of a marvellous mixture of French Renaissance, Dutch gables, Genoese ornament, English 18th-century windows, and telegraph wires in the sky, it is not easy to see. As to the accommodation to be provided, some competitors were content with an archway only, others included a porter's lodge, and one had an extensive frontage of such attraction that two steamboat piers were provided for the traffic it was likely to occasion. Nevertheless, although the design was rather too vast, its detail was to the point; and I, for one, am not going to quarrel with "The Bard" for exercising his imagination. The awards made by the Council meet the merits of the case, for "Corona's" design is dignified and interesting, and shown in a well-drawn elevation and perspective. "St. George" is also simple and fairly dignified, but it has the appearance rather of a subsidiary entrance to an important park than its chief gateway. The drawings are well executed, and include some capital metal-work in the gates, but they are not altogether free from the rather widespread vice of affectation. It is not so rampant here as in some of the other sets in this competition and the Soane, but it is to be detected in the balloon-like drapery of the statuary and the hard, marble-like clouds. The third premiated design, by "Marble Arch," is also simple, dignified, and well drawn. I must protest against the affectation already mentioned as being prevalent among certain draughtsmen. It affects the accessories chiefly: skies are made to look like masses of telegraph wires, or are divided into parallel strips of dark cloud divided by thin regular lines of sky; figures are introduced hard and badly drawn, imitating the unpleasant style of Aubrey Beardsley. Sometimes the building itself suffers: coarse lines obliterate all delicate detail—and it should be borne in mind that very often "thick lines hide thin designs"; or the elevation and perspectives are put in with quivering, hard-drawn lines. These are only some of the forms which affectation takes—and occasionally with the hope of attracting attention which would never be bestowed upon the design itself. All such devices ought to be eschewed by a broad-minded student. But let no one be discouraged by finding that he

is not so expert a draughtsman as his neighbour. Drawing and designing are by no means interchangeable terms, and a study of the lists of past prize-winners may not only gratify the prize-winners of to-day, but go far towards comforting unsuccessful competitors with the thought that though their names do not appear on any of those lists, they may, nevertheless, be ultimately written in some corner of the scroll of Fame. But there still remains

THE GRISSELL MEDAL

for which eighteen designs were submitted. The subject is a simple one—a Timber Footbridge across a Stream—and it has brought forth from their modest retirement several designers of unambitious aims. Ambition should be made of sterner stuff than they appear to offer. But there are several designs which appropriately meet the case, and give us clear, simple, constructional, and yet eyeable results. As I am just now playing the part of a critic, I will venture to do that which I should otherwise refrain from doing, and that is to say that I hardly agree with the Council's award in this case. Not that the successful design is not pleasing—it is, perhaps, the most monumental of all. But the Grissell Medal is primarily offered for problems in construction: the problem here is a timber bridge; and I venture to think that the covering of "Pons Asinorum's" bridge is treated in a manner more suitable to stone than to timber; it is, indeed, strictly speaking, mere surplussage. The bridge itself is constructionally designed, but so are many others, and one or two of them have coverings which, in my opinion, are more constructionally designed than that of the prize-winner. The ideas about this bridge vary as much as those concerning the club and the gateway. Some competitors are content to cross the stream in the simplest and cheapest way possible, in such a manner as would endear itself to the heart of an economical railway director; others prefer to lounge over the water under cover of a roof. Most of them cross at the level of the ground on either side; but one provides for somewhat lofty traffic on the stream, and makes his foot-passengers climb a staircase at each end. One competitor, forgetful of the main object of the work, elaborates the detail of his stone piers too much. Taking the whole set of designs, there is hardly so large a proportion of success as in the other two competitions. This is, perhaps, hardly to be wondered at, because the problem involved in the Grissell competition is one of the most difficult which architects have to solve, namely, to make construction itself beautiful. Well, I have said my say. I am afraid you will not find your doubts and difficulties much lessened by my remarks and criticisms. My desire has been to raise rather than lower the standard of endeavour, and if I may slightly paraphrase Brutus's words, I would say, "Who is here so vile that will not love his Art? If any, speak, for him I have offended."

The President afterwards distributed the prizes in accordance with the list published by us on January 25 last, p. 113, and at the close a vote of thanks was passed to the President, Mr. Gotch, and Mr. Locke, on the motion of Messrs. JOHN SLATER and ASTON WEBB, A.R.A.

THE COUNTRY HOUSE AND ITS ENVIRONMENT.

[WITH ILLUSTRATIONS.]

THERE could hardly be presented to the artistic-minded Englishman a more delightful subject than this, so suggestive of an ideal home surrounded by gardens, terraces, lawns, and avenues, with landscapes beyond. The architect, of all men, should realise the importance of the environment of a building; but experience shows that in these days of decadence this is by no means always the case. Indeed, only the other day one of the Past-Presidents of the Architectural Association gave young architects, by way of a new-century greeting, this epigrammatic piece of advice: "Eschew gardening!" It is very possibly true that an architect's calling is sufficiently onerous already without adding another field for his overtaxed energies. The specialist in fireproof construction or the expert in the London Building Act, on the other hand, is scarcely likely to design a country house of sufficient artistic interest to make it matter much what its immediate settings might be, though a hideous house may be improved by good gardens and shrubberies round it. Someone

said that "the best landscape is improved by a good hotel in the foreground." It all depends upon one's point of view. We cannot conceive an artistic house-builder, call him by whatever other name you may, willingly eschewing the consideration of the gardens round his house, and, therefore, it seems to us that the charming book of photographic reproductions of "Gardens Old and New," just issued by George Newnes, Limited, in the "Country Life Library," will be widely welcomed and highly valued by numerous readers. As a record alone of the stately homes of England, the volume takes a prominent place, while as a pictorial folio of beautiful places it cannot fail to charm all who consult its pages.

Many famous and familiar houses are necessarily included, and of these, works such as Nash's "Mansions" and Gotch's "English Renaissance" include admirable illustrations; but beyond these in the work before us, the architect will find country seats and rural dwellings of less conspicuous importance as compared with the more leading examples, but which, nevertheless, are possessed of considerable interest and suggestive ideas. Possibly, as in the case of the entrance to Cleve Prior, the gateway to which furnishes the frontispiece, only a mere detail is represented, or, again, the thatched summer-house in the Quad Garden of Kelly House, Tavistock. Both of these make views which all will be glad to see included. By the courtesy of the publishers we have chosen two typical plates, printed herewith, by way of giving an idea of the style and beauty of the photographs thus brought together. The first represents a triumph in garden architecture—viz., one of the pavilions flanking the inclosed quad on the park side of Montacute, Somerset,* the seat of Mr. W. R. Phelps, erected between 1580 and 1601 by his ancestor, Sir Edward Phelps, Master of the Rolls, and Speaker of the House of Commons. The house is too well known to need any particular description here; suffice it to say that those who are most familiar with its many-windowed façades will most value the charming series of views of the mansion and its surroundings which figure in "Gardens, Old and New." The second subject selected by us to-day shows the garden front of Blickling Hall, Norfolk, near Aylsham,† the country home of Constance Marchioness of Lothian. This view will be new to the majority of our readers, as it is taken from the high ground beyond the confines of the great formal garden stretching to the eastwards of the mansion laid out by Nesfield, Sen. Lord Chief Justice Hobart erected the house in 1620, and round it there is a sunk garden once used as a moat. The charm of the place is greatly enhanced by the fact that the house and the gardens are in perfect accord, and in both beauty is amply realised. There is no more delightful house in the Eastern Counties, and none more artistically preserved, free from ostentation, and yet well kept up. Thousands of tourists visit this home of the Lothians every year.

Clevedon Court, though not much of a house architecturally speaking, has some remarkable terraces, and Levens Hall, Westmoreland, is, of course, most noted for its ancient topiary work and formal quaintnesses combined in such a way as to make a most delightful place. "Tonsile evergreens shaped into a variety of forms" can also be seen in great perfection at Elvaston Castle, the Earl of Harrington's Derbyshire seat. In one of the views the "Topiarius" is seen at work in the "Alhambra Garden" there. Roux Lench Court, Worcestershire, "Stoneleigh Abbey," Wilton House, Salisbury, and Longford Castle, with their grand gardens, are all shown. Midst these we stop to renew our acquaintance with St. Catherine's Court, not far from Bath. It is a small house, relatively speaking, but taken with the church few can surpass its beauty. The great grass stairway deserves mention. Sydenham House, on the borders of Devonshire, close by Launceston, Mr. John

Tremayne's residence, built in a hollow, is quite out of the ordinary track, though so close to the railway; a thoroughly English piece of work. Belton, near Grantham, the magnificent home of Lord Brownlow, has grounds of such extent and beauty, that few can compare with them, and the same may be said of Ashridge Park, another seat of Earl Brownlow's at Great Berkhamstead. Condover, in Shropshire; Ven House, Somerset; Chatsworth, Derbyshire, and Warwick Castle need only be enumerated to indicate what subjects they make for pictorial illustration, and all are done justice to in the volume before us. Ham House, Richmond, a well-known favourite at Petersham. Cleve Prior, Worcester, we have previously mentioned, but we did not name the Apostles and Evangelists in Yew leading up to the house. Athelhampton Hall, Dorchester; Ightham Mote in Kent; Fountains Hall, Yorks; Prior Park, Bath; and Penshanger, Herts, are as varied as architecture could make them, but each in its turn reveals a beauty and grace not to be forgotten. And so with Mr. Kemp's house, Old Place, Lindfield, Sussex; Broughton Castle, near Banbury; Hardwick Hall and Drayton in Northamptonshire. We recall them one and all, and still we have not exhausted the limits of this volume with its wealth of illustration, of which there are several hundred, and the price is only two guineas net. We should only tire by enumerating more; but we cannot close without including a reference to Brome Hall, Norfolk, where formal gardening is seen carried to the extent of its limit, and yet in many ways at its best. The iron gates, lead statues, and terrace steps from several places make quite a feature in this book for useful reference in illustration of garden architecture and ornament.

THE PRESENT CONDITION OF THE BUILDING INDUSTRY.

AT the ordinary general meeting of the Surveyors' Institution, held on Monday last, an important paper bearing the above title was read by Mr. Thomas Blashill (Fellow), for many years superintending architect to the London County Council. It seemed, said Mr. Blashill, that the present was a time when the condition of this important industry might usefully be brought under review, and for studying the question in all its aspects, the surveyor had peculiar advantages. He was personally disinterested, and was trained to fair and impartial dealing in matters where the importance of accuracy was paramount. There was, to begin with, a radical difference between the crafts which made up the building industry and the class of solitary trades and manufactures. However complex the work of designing and erecting a house may now have become, it was still a single thing that was wanted, the separate contributions to it being useless if they stood alone. Combination alone gave them value. But outside the partnership of all the arts and crafts necessary to accomplish the end there stood outside the one who set the whole to work—the employer, or client, who was really the motive power, and the source of all fees, wages, and profits, and was perhaps entitled to more consideration than he usually got, even from the architect. No pains were too great to insure getting from a client his true intention. Any architect who had the reputation of one who, from failing to do this, had to find that the ultimate cost exceeds his estimates, was not likely to satisfy either client or contractor. Where a building was simple and alterations were avoided, or if it could be easily supervised from the office, the clerk of works was often not necessary—otherwise he was indispensable; but he should in all cases be paid in proportion to his responsibility, and not as a mere foreman. The architect should act fairly as between client and contractor; and the contract, while strictly binding the latter, should be incapable of being used unfairly against him. To get a good tender from a trustworthy builder, three things were necessary: it must be clear what he must do and what he will be paid; he must not be hampered by troublesome restrictions and conditions; and the contract must be so drawn that he will not fear the application to himself of clauses meant for a builder of another sort. To gain the first point and encourage speed, it was necessary to first of all have full detail drawings, as every quantity surveyor would agree. The importance of everything that promoted speedy construction was immense. The client wanted his building *now*, and for non-

* A plan of Montacute appeared in the BUILDING NEWS for Feb. 18, 1897, with view of garden front; Aug. 24, 1893, some sketches by Mr. T. G. Jackson, R.A.; a view by Joseph Nash was given in the BUILDING NEWS for March 15, 1895; Mr. G. S. Elgood's sketch in the garden was published April 1, 1892.

† A plan of Blickling Hall, with a view of the south front and bridge over the moat, by Mr. Maurice B. Adams, was given on Jan. 5, 1894; and in the following number of the BUILDING NEWS a report appeared of Mr. Adams's paper on the work he carried out at Blickling, read before the R.I.B.A. His Royal Academy view of the mansion figured in the BUILDING NEWS for Feb. 6, 1895, showing the entrance front. The garden front was illustrated by us on April 14, 1893.

speculative work the money was, as a rule, forthcoming as soon as the work could be completed. The money gain to the contractor was enormous, and the avoidance of changes of plans was to the architect a distinct advantage. It was worth the architect's while to choose such materials and methods as made for speed, and to avoid confusing variations and alterations. The old practice of leaving it to the builders to select a quantity surveyor had given place to selection by the architect, the builders having the option of tendering or not, knowing his usual method of taking quantities out. A client of moderate means might have to be protected from the possibility of having to pay more money than he could afford; but in the case of public bodies and clients to whom the possible risk was not a serious consideration, the quantities should form the basis of the contract, and, if reasonably priced, of settling the accounts. Sub-letting by a contractor must be carefully watched, and kept within bounds. Serious misunderstandings, on the other hand, arose from the architect arranging for special works with other parties whose tenders he put down in the specification, stipulating that the general contractor should adopt and pay these parties as "sub-contractors." The contractor complained of being deprived of his right of bargaining and dealing with a known firm, and disputes might arise as to the presence of other workmen than his own. The author hoped that the conditions of contract now under discussion by the Institutes of Architects and Builders would remedy this; but he thought that the items needing special treatment should be reduced to a minimum. If in a specification £1,000 were provided to pay a sub-contractor, say, for ironwork, and the contractor was to add his own profit, the lowest tender often included nothing for profit, the contractor reckoning to get from the sub-contractor 10 per cent. profit in addition to discount. If £100 were added so that the contractor might get his 10 per cent., he struck this item out, and delayed payment with the same object as before. In either case it was very unsatisfactory. A careful architect ought to know what he wanted, and could select alternative suitable makes of material, so that the contractor might have a choice of selection and bargaining. It had been said that the secret of trade lists could not be penetrated by architects, and that the system was unalterable; but the architect might ascertain by direct inquiry what was the lowest price of the goods to a safe purchaser, and then allow the contractor a fair profit. The worst of varying trade discounts was that they formed a fund out of which "secret commissions" might be paid, but this practice was repudiated by all respectable architects. The best course was to let a contractor make or buy and fix every article that could safely be left to him. It was best to have ironwork details calculated and completely worked out in the office, and, subject to tests, let the contractor make his own arrangements for their supply. As iron superseded timber, a builder's yard would contain more smiths and less carpenters, and should indeed be less a storage place than a factory. The two main questions under a contract were, faithful execution of the work, and, if alterations arose, the final settlement of the accounts. A contract was a legally binding business document. The specifications and drawings must clearly set out what was to be done. The contract was not to do as much of the work, or to do it as well, as the closest watching could compel; but, unless it were lawfully modified, to do the very thing set down, as a thing which is to be paid for and therefore must be honestly delivered to the purchaser. The settlement of accounts under a contract afforded much legitimate opportunity for discussions on details of extras and prices for articles outside the contract. But there was no excuse for throwing dust in the surveyor's eyes, or misrepresenting the things done or left undone. The question of "prime cost" was in a very unsatisfactory state. It should be easily definable: but at present the amount of the client's ultimate payment did not depend so much on what he got for it as on the skill or pertinacity, or the sense of honour, of the parties arguing over the final settlement. Extras due to a client's change of mind were a nuisance to the architect and the surveyor; but the extras arising from an ill-considered design, or some change of the architect's plan, gave real trouble. If twice the time were spent over drawings, one-half might be saved over the building in settling extras. Without a special guarantee the quantity sur-

veyor was only legally bound to do his best with reasonable care and skill. He should not have the responsibility of deciding everything beyond the artistic beauty of the design. He could not know, as the architect should, what was wanted, and at what cost; but could, at best, only suggest means of attaining the end. The general contractor began practically to exist in the Cubitts' day, at the beginning of the century. The old system of separate contracts worked fairly well in its time, but the modern system was more satisfactory. The modern builder on a large scale employed machinery in every possible way, and the workmen in many trades became a fixer and fitter instead of an artisan. New methods and new machines were constantly being introduced, and the enterprising foreigner, when taking your cheque for the very latest machine, was thinking of the next year when he could show you one which infinitely surpassed it. In discussing the English builder of to-morrow it was quite impossible to ignore the American builder of to-day—a man who would run an eighteen-story building, 100ft. by 50ft., on plan, at the rate of two stories a week, or, for the more artistic parts, one story a week, even in the winter. The noble building of the Surveyors' Institution, if erected at the same speed, would have reached its present height in less than one month, and would have overtopped the pinnacles of Westminster Abbey in fifteen weeks! Whether the duplication of work, as between architect and builder, was entirely satisfactory was a question. Many builders had retained a staff of skilled architects. Osborne House was an example of the method. The question of building upon a schedule of prices was now frequently adopted, and, he thought, on an increasing scale, with the result that often the prices were lower than any to be got by open tendering. The man, somewhat curiously called the "speculating" builder, was a useful product of the times. He invested money, he exercised skill in acquiring land and materials, and employing labour. He was a manufacturer and a merchant. The elevations were modern. He paid fair wages, gave the authorities no trouble, and turned out his houses as a purely business transaction. The "jerry" builder, on the other hand, had nothing to lose. He got hold of sites, was financed, mortgaged, and was gone. He was old enough to have had practical experience of the operative of fifty years ago, and he was conscious, after his long acquaintance with the class, that, however well the professional man and the operative might work together, there was still a great gulf between them, and it was difficult to get the one class to enter into the other's feelings. The professional man, even if he entered his profession at the very foot of the ladder, might hope to come to eminence; but the workman had seldom the same chance. The trade-unions hoped to accomplish what the individual workman could not. Apart from unemployed and sick benefit, and the preservation of internal harmony, they sought to protect trade rights and the privileges of members. They went beyond the rules of professional societies, but did nothing which such societies might not do if they saw fit. Wages were regulated, not on any fixed principle, but with reference to time and place and circumstances. It was really at the prevention of "sweating" that the trade-unions aimed. Where a machine could, by driving it faster, produce more work, while the man who minded it remained the same, that was day-work "sweating." But if, in doing piece-work, a man continually turned out better work than his neighbours, the employer might level down his pay to what he thought he ought to earn, and all his fellow-workers would suffer in proportion. The author was afraid that most of us got into a habit of talking of "time" as if it were a term interchangeable with "labour"—as if it were something valuable by which money could be made. But time itself was worthless. No employer would think of paying for it. What the employer buys is so much improvement to the material which he puts before the workman as may reasonably be expected to be done in the time by which the payment is calculated. It was simply a measurement by the town clock instead of by the five-foot rod, and if a day's work were a fixed quantity, the clock would measure it more accurately than the rod. But directly this altered, and one interfered with the amount of work done in a given time, payment by time became piece-work under another name. The desire to have an easy life was common among timeworkers of

every class, and when men worked together all at the same pace, it was the pace of the slowest, or possibly the most idle, and a judicious employer would very carefully select his slowest hand. There was, however, a more serious matter than mere idleness—he referred to deliberate loitering to delay the day when the hands would be paid off, or to keep longer in hand for the benefit of workmen in general. A paper read by Mr. Brassey before the R.I.B.A. in 1878 brought out evidence on this point. It was shown that a rise in the cost of building of 20 to 30 per cent. was not due to the cost of materials having risen, but to the small amount of work done by the men, who, the contractors found, did little more than half the work for 9d. an hour than they formerly did for 6d. One employer then said that the unions forbade piecework, with the object of obtaining "the largest amount of pay for the smallest amount of work in the least number of working hours." Space does not permit of our following Mr. Blashill's paper through all its interesting arguments; but the instances he gave of deliberate loitering went far to prove that the British operative was in many ways ill-advised in his methods of trying to "hit the public" in every way. The plumbers of Chicago had a better way. They fixed what they considered a fair day's work of seven hours; they did it in five hours, and they drew a full day's pay. The author spoke somewhat bitterly of workmen who claimed to do work which other men thought to be theirs, and did it in their own expensive way. He instanced a dispute between plasterers and bricklayers, in which the former objected because the labourers carried plaster or mortar in a barrow instead of a head-board, and because they mixed plaster on a board with a trowel instead of in a bucket stirred with a stick. A foreman plasterer in another case was fined a sovereign by his lodge because he stayed a few minutes behind to finish off some moulding which, if left undone on the Saturday, would have delayed other trades who were ready to start on the Monday. Besides the effect of machinery, the demand for new materials (such as fireproof construction) seriously affected many trades. Carpenters' work was now superseded by iron. Joiners were mere fixers of imported materials in many cases; masons' work and cut brickwork was being ousted by terracotta, and all work which required special skill was being done by men or by processes outside the trade. After dealing with the possibility and practicability of workmen undertaking co-operative contracts, of the success of which experience led him to doubt, Mr. Blashill repeated that at the back of all—architect, surveyor, contractor, and workman—the one motive power was the client, who was the public, and who would not wait indefinitely while his servants squabbled over his work. As artists, as craftsmen, as men of business, all were in the same boat. The whole industry was one, and all engaged in it should learn to travel together, though some might journey on to the higher grades, while others were content to remain doing their best at less exalted levels.

A vote of thanks to the author was proposed by Mr. Howard Chatfield Clarke, and seconded by Mr. Daniel Watney, and the discussion of the paper was then adjourned to the next meeting.

The Watford School Board has agreed that competitive designs for the new Victoria Boys' School be invited from Mr. Ayres, Mr. Brewer, Messrs. Pridmore and Anderson, and Mr. Syme all of Watford, and that Mr. T. J. Bailey, architect to the London School Board, be appointed assessor, with a fee of 15 guineas.

A Local Government Board inquiry was held at St. Mary's Hall, Coventry, the other day, before Col. W. R. Slake, R.E., into the application of the corporation to borrow £32,962 for sewerage and surface-water drainage works, and £1,150 for the purchase of land for street improvements. Mr. J. E. Swindlehurst, the city surveyor, explained the proposals.

One hundred and fourteen private Bills dealing with the construction of railways and tramways, street improvements, and other cognate matters, were read a first time in the House of Commons on Monday evening, and a number of the measures which are to originate in the Upper House were also advanced a stage in that Chamber. The time for the deposit of the opposing petitions expires on Friday in next week, March 8, and after that date the second readings can be taken.

Building Intelligence.

B. A. ST. EDMUND.—A light roof in three spans has been erected over the sale ring and adjacent cattle and sheep pens of Messrs. Simpson's auction mart, the area covered measuring 14 ft. by 7 ft. The work has been carried out by Messrs. Hill and Smith, of Brierley-hill, Staffordshire, from plans and details prepared by Mr. Arthur J. Lacey, M.S.A., Norwich, and under his personal supervision.

SELBY.—A cottage hospital, having attached to it a dispensary, was recently opened at Selby, by the Countess of Londesborough. The hospital stands at the bottom of New-lane, opposite the School of Art, and makes no pretence to architectural merit. It is a two-story building of brick, with stone dressings. On the ground floor are waiting-room, dispensary, matrons' room, store-room, and accident ward, with bath-room. The height of this ward is 12 ft., and the walls are plastered in Portland and Parian cement. The floors are of pitch-pine boards, and the place is heated by means of Shorland's patent draught stove. Upstairs are three bedrooms, and adjoining are the bathroom and linen closets. The roof is covered with Penrhyn slates and Staffordshire red ridges. The yard at the back is laid with cement concrete, and in front is an ornamental wood palisade. The cost of the building is said to have been about £1,500. It was erected by Mr. T. S. Ullathorne, of Selby, from designs by Mr. Brownlow Thompson, of Hull.

CHIPS.

The urban district council of Bromsgrove have appointed Mr. Gadd as architect for the new market hall and public buildings. The estimated cost with shops in the frontages is £7,000.

Mr. J. Passmore Edwards has promised that, if the scheme now before the London County Council for the housing of 35,000 people at Tottenham is carried through, he will be happy to provide a public free library for them.

At the town-hall, Bootle, a Local Government Board inquiry was held on Friday by Mr. H. W. Law, M.Inst.C.E., into the application of the Bootle Town Council for sanction to borrow £8,150 for additions and alterations to the town-hall and offices, and a further £7,000 for the purpose of carrying out sanitary improvements under the provisions of the Bootle Order, 1897.

Mr. C. F. Parkinson, of Morecambe, has been appointed electrical engineer of the borough of Paisley, at a salary of £250, with a free house.

For family convenience, the firm of Messrs. Greaves, Bull, and Lakin, of Warwick and Harbury, Leamington, have converted their business into a limited liability company, and the style of the firm henceforth will be "Greaves, Bull, and Lakin, Limited." On Saturday last the chief offices of the firm were removed from Warwick to Harbury, Leamington. This alteration is rendered necessary by the great extension of the business. The branch offices in London and Birmingham will remain at present.

The Peterborough, Sittingbourne, and Birmingham brickyards will be visited by members of the German Institute of Clayworkers on April 17 to 27.

In connection with the recent disastrous floods at Coventry, a report has been published by Mr. J. E. Swindlehurst, the city engineer, stating that, to avoid similar catastrophes in future, no merely local scheme will be adequate. He urges that either the area of the river bed should be increased, or that a certain proportion of the water in the higher part of the watershed should be "ponded," or a combination of the two. The minimum cost is estimated at £150,000.

The First Division of the Scottish Court of Session has recalled a judgment of Lord Pearson and given the Clippens Oil Company decree against the Edinburgh and District Water Trust for the sums of £8,079 and £2,250 awarded to the company by Sheriff Jameson in a reference as to the value of the company's minerals underneath the Water Trust pipe track.

The new higher-grade schools, erected near the Sandown railway-station by order of the Brading School Board, were formally opened on Wednesday week. The buildings are from designs by Mr. James Newman, of Sandown, and were built by Messrs. James Ball and Sons, of Cowes. Including the furnishing, the cost altogether was £7,210.

New Wesleyan Sunday-schools in West Hill-road, Cowes, built at a cost of £8,000, were opened last week. The chief room is 48 ft. by 50 ft., and adjoining is an infants' room for 150 children.

COMPETITIONS.

DEVIZES.—A meeting of the committee for carrying out the Joint Isolation Hospital for the urban and rural district of Devizes have considered the report of Mr. C. E. Ponting, F.S.A., of Marlborough, the assessor, who had been appointed to examine the 45 sets of plans sent in for competition, in response to an offer of two premiums of £20 and £10. Five sets of plans were selected, and the committee awarded the first premium of £20 to "Hygiene II." (Messrs. E. C. Isborn, Devizes, and G. Boughton, Woodlands, Ryde, Isle of Wight). The second premium of £10 was awarded to "Q." (Messrs. C. Bell, Wilton, and Meredith, Salters' Hall-court, E.C.). Three other sets were accepted in reserve—viz., "Efficiency" (Mr. J. H. Goodman, Reading), "Esculapian" (Mr. R. E. Brinkworth, Chippenham), and "Deviser" (Mr. H. H. Clark, Bow-lane, E.C.). The committee decided to adopt for execution "Q.," the second premiated set of plans, as being most likely to come within the amount they wished to spend; specifications will be prepared accordingly, as soon as the sanction of the Wilts County Council and the Local Government Board has been obtained. The unfairness of thus passing over the plans placed first alike by the assessor and the committee is obvious.

BARROW-IN-FURNESS.—A competition was recently held, open to local architects only, for a board school to be erected near the new town which Messrs. Vickers, Son, and Maxim are building on Walney Island. The Barrow-in-Furness School Board appointed Mr. Thos. Bell, of Burnley, assessor, and he placed the plans of Mr. Henry T. Fowler, architect and surveyor, of Ramsden-square, first, those of Mr. J. B. Macintosh, second, and of Mr. W. Moss Settle, A.R.I.B.A., third, and this decision has been confirmed by the school board. The school is to provide accommodation for 600 children, including temporary accommodation for 180 infants; but these latter will be removed to a separate infants' building, if the progress of Vickerstown renders increased accommodation necessary.

SEVENOAKS.—The urban district council have, after much discussion, adopted the report of the assessor, Mr. Keith D. Young, F.R.I.B.A., of London, on the plans submitted for the proposed isolation hospital, and have awarded the premium to "Lucidity," who proved to be Mr. W. H. Ansell, A.R.I.B.A., 11, Great James-street, Bedford-row, W.C. Mr. Ansell, who has been appointed architect for the hospital, has been requested to meet the committee with a view to modifying his plans and reducing the cost of erection.

WATER SUPPLY AND SANITARY MATTERS.

THE DUMFRIES AND MAXWELLTOWN SEWAGE QUESTION.—The resolution of Dumfries Town Council to proceed with an independent scheme of sewage purification was communicated to the town council of the adjoining burgh of Maxwelltown at a special meeting. It was eventually decided to carry out the scheme submitted for Maxwelltown by Mr. W. A. Carter, C.E.

The Local Government Board have approved plans prepared by Mr. Fredk. C. Ruddle, F.A.S.I., Union architect, Blackburn, for a new wing and maternity wards on the female side of the work-house infirmary, Blackburn. The accommodation at the infirmary will be increased by 75 beds.

A marble bust of Dr. Robert Brown, the distinguished botanist, who was the first curator of the botanical department of the British Museum, and died while holding that position in 1858, aged 84, was unveiled yesterday in the picture gallery at Marischal College, Aberdeen. The memorial bust was executed by Mr. D. W. Stevenson, R.S.A., Edinburgh.

Colonel A. J. Hepper has held an inquiry at Sheffield into the application of the corporation for sanction to borrow £79,135 for works of sewerage and street improvements.

The members of the Aberdeen Association of Civil Engineers inspected, on Saturday, the improvement works in that harbour, over which they were conducted by Mr. R. Gordon Nicol, C.E., the harbour engineer, and his senior assistant, Mr. William Simpson. These works, which include the new Regent Bridge, were commenced about two years ago, and are now about half completed. It is estimated that the works in progress will cost about £100,000.

LEGAL INTELLIGENCE.

WORKMEN'S COMPENSATION.—DEFINITION OF THE "THIRTY FEET" RULE.—In the Manchester County-court, on Friday, his Honour Judge Parry gave judgment in a case which involved an interesting point under the Workmen's Compensation Act. At a previous sitting of the court, Christopher M'Grath, bricksetter, Alliance-street, Harpurhey, brought an action against his employers, Messrs. R. Neill and Sons, building contractors, for damages in respect of an injury sustained while working on some warehouses that were being erected in Hilton-street. Mr. Jordan, for the respondents, set up the defence that the building on which the applicant was engaged, had not reached the height of 30 ft. required by the Act. His Honour, in a written judgment, said he had to decide how a building should be measured under section 7 of the Act. The words of importance in the section were:—"This Act shall apply only to employment on, in, or about any building which exceeds 30 ft. in height." The question for consideration was, When did a building reach the height of 30 ft.? and the first point was why the Legislature introduced the 30 ft. test. It had been suggested that the risk to workmen was the sole reason, but he did not think so, for he noted that a man "about" a building 35 ft. in height was within the Act, although the risk of being "about" a 30 ft. building could scarcely be greater than being "about" a smaller building. It seemed to him, also, that if risk had been the consideration in the mind of the Legislature, and risk only, 20 ft., 15 ft., or even 12 ft. would have been the measure taken, for there, experience of building accidents showed, risk began. He thought the real view of the Legislature in choosing 30 ft. was to make large builders and contractors liable, and to keep outside the Act a poorer and smaller class of builders, whose work had to do with cottage and other small property which rarely reached a height of 30 ft., however measured. In this case four measurements were practically agreed upon—from the footing of the building, from the top of the footing, from the basement floor, and from the level of the street. The applicant sought to prove a brick course or two above the second-floor joist, but the finding was against the applicant on this point, and the second-floor joist must be taken as the highest point of the building. In his view the object should be to find a bottom point, the measurement from which was capable of being found with certainty, and which, when a principle of measurement was laid down, would leave nothing for the employer and the workman to do but to take a 2 ft. rule and find out whether or not the building was within the Act. The street level did not give such a bottom, because no street level was absolutely level, and many were on distinct slopes. Edinburgh Castle was suggested as a building almost impossible to measure from the street or ground-level with any chance of opposing litigants agreeing on the measurements, and many other more normal buildings would present similar difficulty. A building might be surrounded by different streets and different levels, and therefore he rejected the proposal to take the measurement from the street level as unsuitable because wanting in precision and certainty and as being an encouragement to litigation, which the Act could not be taken to intend. For similar reasons the measurement from the basement seemed unsuitable. The basement of a building in course of construction was often full of debris, trenches might be dug in it, and at no place had it, in most buildings, a uniform level. Either of the first or second forms of measurement seemed to comply with the words of the Act and to give a definite measurement. He held that from the footing to the second-floor joist was the right measurement. The difference between the highest point the building had attained and the lowest brick of the actual building was the height of the building. If he was right in this decision the points of measurement were sufficiently definite, top and bottom, to leave little room for litigation and dispute, and to be in harmony with the intentions of the Legislature. His verdict was that in the case under consideration the buildings exceeded 30 ft. in height, and he awarded the applicant 9s. 5d. per week and costs. Leave to appeal would be granted.

WHAT IS A "BUILDER'S" COMMISSION?—ACTION BY AN AUCTION ARCHITECT.—On Feb. 20 at Darlington County-court, his Honour Judge Templer was occupied for several hours in hearing an action brought by Mr. William Perkins, architect and surveyor, Bishop Auckland, against Messrs. Sykes and Co., wholesale and retail ironmongers, Darlington, to recover a sum of £33, alleged to have been overpaid in the accounts between the parties. The defendants counterclaimed for £88 9s. 8d. in respect to commissions to which they said the plaintiff was not now entitled. Mr. R. Luck, M.A. (instructed by Messrs. Maw, Teale, and Tomlinson, Bishop Auckland), appeared for the plaintiff, and Mr. E. Wooler for the defendants. Mr. Luck, in opening the case, stated that since 1896 the plaintiff had had transactions with the defendants, who formerly carried on business at Bishop Auckland.

In that year the plaintiff came to an understanding with the defendants by which he was to be allowed 10 per cent. on all business which he brought them in his capacity as architect. Besides acting as architect, the plaintiff built houses on his own account, and from time to time purchased articles for them from the defendants. A contract was entered into on June 13, 1898, between the Bishop Auckland Industrial Co-operative Society and Mr. Thomas Hilton, for the erection of 13 houses in Etherley-lane. Nine of these houses were built by Mr. Hilton under this contract, and in respect to them £33 was expended in gas-fittings. Mr. Hilton sub-let the contract to the defendants, and the plaintiff went to the defendants' shop and selected the fittings. There were various transactions between them, and the plaintiff sent cheques from time to time—£100, £50, £75, and £200. The defendants included the £33 in their accounts against the plaintiff, who, however, disputed his liability, and brought the action to recover that amount as being overpaid. Mr. William Perkins, the plaintiff, stated that he entered into a verbal contract with the defendants to have a builder's commission of 10 per cent. on all orders he influenced. Hilton had the contract to build 13 houses, but only nine were erected. A sum of £65 was allowed in the quantities for the gas-fittings; only £33 of it was required, distributed over the nine houses. As architect, he selected the gas-fittings, but had nothing more to do with them.—His Honour: Did you get any commission on them? I think there is something in the account.—They would credit you with 10 per cent.? I believe they have done so.—In reply to Mr. Luck, the witness said he had sent cheques to the defendants for sums of £100, £50, and £75, and, on January 13, 1900, one for £200. He subsequently received a letter from the defendants stating that they had debited him with £33 for the gas-fittings. As soon as he received it, he wrote to say that a mistake had been made; that the contract was sublet, and he must not be charged with it. Subsequently, Mr. Raine called, on behalf of the defendants, and offered a cheque for £15 19s. 5d. to settle the account. He, however, refused to take it, and explained his position with respect to the gas-fittings. Mr. Raine said he would explain the matter fully on his return to Darlington, and a cheque for the full amount would be forwarded. A letter was subsequently sent, in which they said he had been debited with the £33. He accepted the cheque inclosed, but not in settlement of the account. The sum of £8 9s. 7d. represented commission upon orders influenced by him. Cross-examined by Mr. Wooler, the witness said he was previously employed by the Co-operative Society to build fifty houses in Hutchinson-street, Shildon.—What were the terms of your employment? On commission.—What was your commission? I forget; perhaps 3 per cent. I ordered some of the goods and got 10 per cent. on them.—Under what principle are you entitled to 10 per cent.? For the goods supplied under the contract.—Did the Co-operative Society know you were getting it? I should say not.—Have you ever disclosed to them that you were getting 10 per cent.? Certainly not.—Was not it your duty to do so, as an architect? Certainly not.—His Honour said he did not see how this question arose; and Mr. Wooler replied that his clients had only just discovered that this was an illicit commission. Mr. Luck: How can you say that, when you show it in your account? His Honour said it might be a question for the Co-operative Society. Mr. Wooler said the defendants had repudiated the commission. Mr. Luck: Until the action was brought it was never mentioned. Mr. Wooler: We did not know all the circumstances. His Honour: You say he was getting a commission of 3 per cent. from the Co-operative Society, and, as he owed a duty to them, it precluded him from getting any further commission? Mr. Wooler: Certainly. In answer to Mr. Wooler, the witness further stated that he wrote to Mr. Hilton and got a cheque for £200 on account of grates and ranges for the houses. Out of that he expended £137.—What have you done with the difference? Mr. Hilton owed me more than that.—You have quarrelled with the Co-operative Society? I have not quarrelled, but there is litigation.—In your account with the society, will you tell me where you have credited them with the difference between £136 and £200. That has nothing to do with it.—Have you not put the difference between these two sums into your own pocket. Certainly not. The witness added that the balance went to square a previous account with Mr. Hilton. The £33 was not included in the £200 paid to him by Mr. Hilton. He sent his own cheque to Messrs. Sykes for £200 to pay for the ranges and metal goods at Etherley-lane, and also towards his own account. He would get commission on £137 of it. His Honour read the letter from the plaintiff asking him for £200 on account of the metal goods for Etherley-lane, and the witness replied that that sum also included the indebtedness to him on a previous account. He added that, perhaps, his request for the cheque was not correctly worded. Reference was also made by Mr. Wooler to the specification under which the

contract was let, and the witness adhered to his statement that the £200 paid to him under it by Hilton did not include the gas-fittings.—Have the Co-operative Society dismissed you? I decline to mention that.—His Honour: Are you still their architect? I maintain I am.—You say they have not power to dismiss you? Certainly not.—They say they have discharged you? It is the first time I have heard it. Mr. Wooler: Have you not employed Mr. Tomlinson, and the Co-operative Society Mr. Simey, and did not an interview take place on Monday? Yes.—You still maintain that you are the architect of the society? I maintain my position.—Do you consider it honest on your part to take this 10 per cent. commission? Certainly.—Are you justified in doing so when employed by the society? It was upon the contract between Mr. Sykes and myself.—That was a secret contract? It was his own suggestion. His Honour asked whether architects were in the habit of receiving a commission in this way, and the witness replied that ironmongers were in the habit of paying it. His Honour said a commission obtained in that way could only be held as a trustee, and would not belong to the architect, but to the person employing him. The witness said Messrs. Sykes distinctly offered to share their profits upon any orders he brought in. They did not know that the £200 he sent came from Hilton. In answer to Mr. Luck, the witness said he had given Hilton credit for the balance between £137 and £200. He had not yet rendered a statement to the Co-operative Society. There was no foundation for saying that the £33 was included in the balance of £63. On behalf of the defendants, Mr. Wooler contended that they were justified in appropriating part of the £200 towards the payment for the fittings, as the plaintiff ordered them. Had the plaintiff not ordered them, he would not have got his 10 per cent. commission. He called Mr. Hilton with reference to the payment of £200, and, in reply to questions, he stated that he was asked for the money to pay Messrs. Sykes, but he did not know whether the fittings were included or not. Mr. Sykes said he did not know at the time the plaintiff selected the goods what his position was, but he considered he was entitled to look to him for the money. He had always looked to the plaintiff as the person liable to the firm. In answer to his Honour, he said he offered the plaintiff 10 per cent. commission because plaintiff said someone else had done so in respect to the 50 houses. After hearing the arguments on both sides, his Honour said the plaintiff was entitled to recover the £33. Unless the defendants could show that he was a party to allowing it to be taken out of the £200, they had no business to do it. Hilton had accounts with the plaintiff, who could do with the balance of the £200 as he liked. By giving judgment against Messrs. Sykes, he did not think they were prejudiced, as they could recover the amount from Hilton, who would be justified in paying it, and the society would see that it was not paid twice. It might be that Hilton would want credit from the plaintiff for it in his current account. As to the commission, he did not think it was for the defendants to say it was a dishonest transaction. If so, they were parties to it. He should not, therefore, ask the plaintiff to give the commission back. Whether it was open to the Co-operative Society to claim it was another matter. Some architects took commissions, others did not. He thought, without saying it was dishonest, that it was a very undesirable practice, and he would not say whether the society could succeed or not. He therefore gave judgment for the £33 claimed, and dismissed the counter-claim, allowing costs to the plaintiff on both. At Mr. Wooler's request, proceedings were stayed for a month.

PUBLIC AUTHORITIES AND THE REPAIR OF FOOT-PATHS.—At the Southwark County-court on Tuesday, before his Honour Judge Addison, K.C., and a jury, a commission agent named Bygrave sued the Southwark Borough Council to recover £50 for personal injuries sustained through the wrongful act of the defendants' servants. It was stated that the defendants' servants were repairing the footpath of Walworth-road, and filled up a vacant space with sand. This was washed and worn away by rain and traffic, and the plaintiff fell in consequence and seriously injured one of his ankles. It was urged on behalf of the defendants that the place was filled in the manner usual throughout London. Judge Addison said that if a person or body made a hole in the highway that was a nuisance. They did it at their peril, and they must use the highest degree of skill in making it good. The jury found for the plaintiff, damages £40, and Judge Addison gave judgment accordingly, with costs.

ARCHITECT AND RESTAURATEUR.—Mr. George Palmer Smedley, architect, of 110, St. Martin's-lane, sued Mr. Alfred Thomas Wilmot, proprietor of the Exeter and Devon Restaurant, Devonshire-street, Bishopsgate, to recover £23 15s. for professional services rendered in the preparation of certain plans for alterations to the defendant's premises. The plaintiff said that the defendant, to whom he was introduced by Messrs. Miskins and

Sons, a firm of builders, wanted certain alterations made to his restaurant. He was told that it would be necessary to have properly prepared plans before the work could be executed, and that 10 per cent. was the percentage allowable by scale. Plaintiff, however, arranged to do the work for 5 per cent. He prepared the plans, and on September 13 the defendant expressed his satisfaction with what had been done. The plans were left with the defendant for the purpose of getting the sanction of his landlord. Afterwards the defendant wrote saying the landlord would not sanction the work, which, therefore, would have to stand over until after Christmas. Afterwards the plaintiff asked the defendant for a cheque of £20 on account, but it was not sent. He had estimated the approximate cost of the alterations at £450, and the present claim was for commission on that sum. Mr. C. W. Miskins and Mr. G. Gard Pye, architect, said they had seen the plans prepared by the plaintiff, and thought they were necessary for the work to be satisfactorily carried out. The latter added that the charges were reasonable. The defendant said he asked the plaintiff to give an estimate for making structural alterations in the basement, which he wished to turn into a dining-room. He only gave instructions for a rough sketch of that part of the work to be prepared. He had other work he wished done, and if the landlord did the alterations he thought that the plaintiff would be employed to execute all the work. He had no intention of spending any money. His landlord was to do the work. He did not instruct the plaintiff to prepare the plans, or make the survey. He had offered the plaintiff £5 5s. for the work he had done. The jury found a verdict for the plaintiff for the amount claimed.

ACTION AS TO GROVE ASYLUM, Tooting Bec.—KIRK AND RANDALL V. METROPOLITAN ASYLUMS BOARD.—In December, 1898, Messrs. Kirk and Randall, builders and contractors, of Woolwich, issued a writ against the Metropolitan Asylums Board in respect of a claim for £34,445, subsequently increased to £41,175 4s. 11d., in respect of the building of the Grove Fever Hospital at Tooting Bec, S.W., chiefly on account of damages for alleged delays by the architect, Mr. A. Hessel Tiltman, F.R.I.B.A., of Russell-square. The action was commenced last week in the court of Mr. Pollock, Official Referee, Mr. Reginald M. Bray, K.C., and Mr. Ratcliffe appealing for the plaintiffs, and Mr. English Harrison, K.C., and Mr. Smith for the defendants. The opening statements of counsel occupied the four days, and the hearing of evidence on behalf of plaintiffs three other days. At the end of the third day's evidence the plaintiffs made an offer to withdraw the whole of their claim, providing they were not asked for costs. This proposal was considered by the Metropolitan Asylums Board in committee on Saturday, and when the case was again mentioned in Mr. Pollock's court on Tuesday in this week, counsel stated that an agreement had been arrived at on these terms. Judgment was accordingly entered for the defendants, each party paying their own costs.

IS THE ARCHITECT AN ARBITRATOR OR AGENT?—IMPORTANT APPEAL CASES.—In the Court of Appeal, on Wednesday, before the Master of the Rolls, Lord Justice Collins, and Lord Justice Romer, judgment was given in two important appeals, in which imputations of apparent negligence by architects were alleged by clients when applied to for the payment of professional fees. The first case considered was that of "Chambers v. Goldthorpe," an appeal by the defendant from the judgment of the Divisional Court (Mr. Justice Channell and Mr. Justice Bucknill) reversing the decision of the Judge of the Holmfirth County Court. The plaintiff, who was an architect, sued for fees. The defendant counterclaimed for negligence. The plaintiff had been employed by the defendant to prepare plans for houses which defendant was about to have built, to superintend the work, and to measure it up when completed. The defendant entered into a contract with a builder, whereby the latter was to erect the houses. This contract was in the usual printed form approved and issued by the National Association of Master Builders of Great Britain, the important clauses so far as the present action was concerned being the well-known ones numbered 1, 8, 16, 19, 20, and 22. After the houses were completed the plaintiff measured up the work done, and gave his final certificate. The plaintiff, having sued the defendant in the County Court for the amount of his fees—viz., 4 per cent. upon £622 14s., the total cost of the work, the defendant counterclaimed for negligence by reason of the plaintiff having incorrectly measured up certain of the work done, whereby the certificate was for a larger amount than it ought to have been. The County Court Judge gave judgment for the plaintiff on the claim, and for the defendant on the counterclaim for damages to be assessed. The Divisional Court held that the architect was, under clause 20 of the contract, placed in a judicial position between the building owner and the contractor with reference to giving his certificate, and, therefore, was

not liable for negligence. They accordingly entered judgment for the plaintiff on the counter-claim. The defendant appealed. Mr. Lwenenthal, for the defendant, contended first that the plaintiff was not made an arbitrator by the contract between the defendant and the contractor. The plaintiff occupied the position merely of the defendant's agent. In the case of "Lloyd Brothers v. Milward," which was not cited in the Court below, the Court of Appeal, upon a contract in the same form as the present, decided that the moment there was a dispute between the building owner and the contractor the architect could not give a certificate. That decision showed that the architect was not in the position of an arbitrator. The architect could only give a certificate when there was no dispute. If there was a dispute, he could not give a certificate, and the dispute had to be determined, under clause 22, by the special referees. The architect could only be an arbitrator when he had to determine a dispute. A person who was not permitted to settle a dispute was not an arbitrator. He also referred upon this point to "Clemence v. Clarke" and "Pappa v. Rose." Secondly, even if the plaintiff was in the position of an arbitrator, as he was suing for his fees under an independent contract, the defendant was entitled to counterclaim for negligence under that contract, and the plaintiff could not rely upon his position as arbitrator under another contract. He referred upon this point to "Rogers v. James," Mr. Scott Fox, K.C., and Mr. R. W. Harper, for the plaintiff, argued that the proper inference to be drawn from the terms of the building contract was that the architect was intended to be placed in the position of an arbitrator. He was bound to exercise his judgment impartially between the two parties to the contract, and his certificate was to be conclusive. It was well established that a person placed in such a judicial position was not liable to an action for negligence.—At the close of the argument, the Master of the Rolls said that the Court would hear the case of "Restell v. Nye," in which it was understood a similar point arose. "Restell v. Nye" was then heard. This was an appeal from the judgment of Mr. Justice Mathew on the trial of an action without a jury. The action was brought by a building owner against an architect to recover damages for negligence. The defendant was employed by the plaintiff as architect in connection with the building of a bungalow for the plaintiff in Sussex. The defendant was to be paid by the plaintiff for "plans, specifications, and supervision of works" 5 per cent. upon the amount of the expenditure, travelling and out-of-pocket expenses to be charged extra. The defendant prepared a specification, and a tender submitted by a firm of builders at Brighton for the erection of the bungalow for £1,790 was accepted. The work was completed, and the plaintiff paid the contract price together with the cost of certain extras on the defendant's certificates. The plaintiff alleged in this action that the defendant had omitted to check the builder's account with due skill and negligence, and had passed as extras works included in the contract, and had certified for sums improperly passed. The building contract was in substance the same as that in the previous case of "Chambers v. Goldthorpe." The only part in which there was any material variation was the arbitration clause. Mr. Justice Mathew gave judgment for the defendant, on the ground that he was in the position of an arbitrator and that an action would not lie against him for negligence. The plaintiff appealed. Mr. Bray, K.C., and Mr. Morten appeared for the plaintiff; Mr. Horton Smith for the defendant. The Court dismissed both appeals, Lord Justice Romer dissenting. The Master of the Rolls said he would deal first with the case of "Chambers v. Goldthorpe." The plaintiff, Chambers, an architect, sued the defendant, Goldthorpe, a building owner, for payment of fees. The building owner counter-claimed for damages for negligence on the part of the architect in bringing out his final certificate. The only question raised on the appeal was one which arose on the counter-claim, and was this—whether Chambers was placed in the position of an arbitrator, or whether he was merely in the position of a person acting as agent for the building owner. If he was an arbitrator, then the building owner could not sue him for negligence; he could only sue him for fraud or collusion, and there was no suggestion in this case of anything of that kind. When they looked at the building contract it was plain that under many of the clauses of the contract Chambers was only to act as agent for Goldthorpe. But when they came to clause 20, the question arose, Did the architect still remain merely the agent of the building owner, or was he not an arbitrator? With regard to clause 20, the architect undertook the duty of bringing out a final certificate. With respect to that, he owed a duty to the builder as well as to the building owner, his duty being to hold the balance fairly between the one and the other. His Lordship referred to the cases of "Clemence v. Clarke," "Lloyd Brothers v. Milward," and "Stevenson v. Watson," and pointed out, with reference to the last-mentioned case,

that Chambers had not merely to make an arithmetical calculation, but to use professional knowledge and skill. He thought that the case of "Tharais Sulphur Company v. Loftus," which was the case of an average adjuster, had a strong bearing on the case before them. He came to the conclusion that Chambers was in the position of an arbitrator. With regard to "Rogers v. James," he thought that case had nothing to do with this. For the same reasons he thought that the claim in the other case, "Restell v. Nye," could not be maintained, and that the appeal in that case should also be dismissed. Lord Justice Collins said he was of the same opinion. The question seemed to him to be the same in both cases—viz., whether the architect was in the position of a *quasi*-arbitrator. If he was, then the case against him in each instance must fail. He thought that the present cases were governed by "Pappa v. Rose," "Tharais Sulphur Company v. Loftus," and "Stevenson v. Watson," and that the architect in each case was in the position of a *quasi*-arbitrator. He therefore agreed that the appeals should be dismissed. Lord Justice Romer said he regretted to differ from his learned brethren. He would state his views on what seemed to him to be a question of principle. In his opinion, if a person undertook for reward to value or estimate for another work about to be done for his principal by a third person, he did not, so far as his principal was concerned, become in the position of an arbitrator in regard to his valuation or estimate merely because he knew that his principal and the third person had by contract between them agreed that, in default of dispute previously arising with regard to the matter, his valuation or estimate was to be taken as conclusive and as determining the price to be paid by his principal for the work to be done by the third person. In such a case, in giving his valuation or estimate he would still be acting for his principal, and, so long as he acted without fraud, he would be under no obligation or liability to the third person. And acting, as he would do, for his principal, if he was guilty of negligence causing damage, he would be liable to his principal in an action brought by him. He could not bring himself to think that that view was wrong. And yet, undoubtedly, the contrary view must be maintained by the architect in the present case to enable him to succeed on this appeal. If in doing work, for which he was to be paid by his principal, the architect was guilty of negligence from which damage ensued to his principal, he would be *prima facie* liable. To enable him to escape from that liability, the onus would be on him to show that by the terms of the contract between his principal and the contractor he was freed from that *prima facie* liability. He might do so if he could show that by those terms he was undoubtedly placed in the position of an arbitrator with regard to his certificates, and that the principal's complaint against him in regard to the certificates was for something done in his capacity of arbitrator. But the architect would not succeed in showing this merely by reason of the fact that his principal and the contractor had by the contract agreed that in the case of no prior dispute arising with reference thereto his certificates should be treated as conclusive between them. Clause 22 of the contract was an arbitration clause which did provide for the settlement of disputes by an arbitrator who was not the architect, and in that clause the architect was clearly recognised as the agent of the building owner. And clause 8 was not without significance. They found that though the architect's principal would be bound under clause 20 by the architect's certificate in reference to these matters, yet under Clause 22 the contractor might challenge the certificate and go to arbitration upon it. In fact, on this contract, far from it enabling the architect to discharge the onus mentioned, it was strongly against him. The cases of "Wadsworth v. Smith" and "Jenkins v. Betham," supported his view strongly, and the balance of all the authorities seemed to be in favour of his view rather than of the contrary view, and also to be more in consonance with natural justice. He, therefore, thought that the appeal in the first case—"Chambers v. Goldthorpe"—ought to be allowed. He took the same view with regard to the other case—"Restell v. Nye."

ELECTRIC ADVERTISING SIGNS.—HULL v. THE LONDON COUNTY COUNCIL.—This appeal, decided in the King's Bench Division, on Friday, by Mr. Justice Bruce and Mr. Justice Phillimore, was brought by Mr. Hull, a shopkeeper carrying on business in the Seven Sisters-road, Islington, from a conviction for exhibiting over his shop an electric advertising sign. The conviction was for a breach of the London Buildings Act, which provided that no obstruction, lamp, bracket, projection from a building beyond the general building-line, &c., should be permitted without the consent of the County Council. For the appellant it was contended that the sign was erected in a window over the shop, and was no projection within the meaning of the section, and, therefore, that the conviction was bad. It was further submitted that the summons was taken out too late. The case was

fully argued some time since by counsel on both sides; and at the close the Court reserved judgment. Mr. Macmorran, K.C., for the appellant, then contended that section 73 of the London Building Act, 1894, did not apply to projections such as the projection in question, which did not form a part of the building. Such projections had been dealt with in earlier Acts—such as, for instance, the Metropolitan Local Management Act, 1855, section 119 of which gave the local authority power to deal with projections endangering or incommoding the passage of the public along the streets. To place the construction upon the section contended for by the Council would include shop-lamps, reflectors, clocks, and other like projections, with which it would not have been intended to deal in a building Act. There was nothing in section 200, subsection 3, which made it a continuing offence, and express words were necessary. "London County Council v. Cross" and "Marsham v. Smith" were illustrations of that principle. "Welsh v. West Ham Corporation" (1900) and "Metropolitan Board of Works v. Antony" were also referred to. Mr. Avory, K.C., for the London County Council, contended that sections 73 and 22 must be read together. This was a projection within section 73—"Coburg Hotel v. London County Council." The erecting the thing was the offence, the retaining it was the continuing offence—"London County Council v. Warley" (1894). Mr. Justice Bruce, in delivering judgment, said it was contended by counsel for the respondents that section 73 was wide enough to extend to anything attachable to a building. They did not think the words were so wide as to do that, as it was clear the intention of the Statute was to preserve the width of the street in order to maintain architectural uniformity. They felt strengthened in the conclusion at which they had arrived, because no inconvenience was likely to arise. The County Council had power to make by-laws for the regulation of lamps, signs, projections, and such like, and a penalty might be imposed for any breach of the by-laws. They were of the opinion that the action taken by the respondents was barred by lapse of time, and after giving the whole matter the best consideration they could, they came to the conclusion that the conviction must be quashed, and that the appellant was entitled to the costs of the appeal. Judgment accordingly entered for the appellant, with costs.

CHIPS.

The Sturtevant Engineering Company, Ltd., in consequence of the continued growth of its business, has removed into more suitable offices at 147, Queen Victoria-street, E.C., where all communications should now be addressed.

The old-established business of Messrs. Wm. Woollams and Co., carried on for some years at 110, High-street, Marylebone, together with the extensive stock of hand and machine-made wallpaper, printing-blocks, machinery, and trade fittings, with the goodwill of the business, was offered for sale at the Holborn Restaurant on Tuesday last by Messrs. Fredk. Miller and Reid, of Clement's Inn. The result of the sale was that (lot 1) the trustee's interest in the business, trade fittings, machinery, and goodwill realised £1,900. Lot 2, which comprises the leases of the premises, was not sold, in consequence of the same being somewhat heavily charged.

Of the total amount of £150,000 required for the rebuilding of the Glasgow and West of Scotland Technical College, £64,189 9s. 5d. has now been subscribed. Mr. W. R. Copland, the chairman of the Governors of the College, read a paper on Friday night as to the rebuilding scheme at a meeting of the Glasgow Building Trades Exchange.

Mr. Thomas Brock, R.A., has been commissioned by the Flower Memorial Committee to execute a bust in marble of the late Sir William Flower, director of the Natural History Museum, South Kensington. The trustees of the museum have consented to accept the bust and erect it in a suitable position in the building at Cromwell-road. It is also intended to place a memorial tablet to the late director in the great whale-room of the museum.

The destruction by fire of the old observatory on the Seeberg at Gotha has brought to naught the plans formed by the late Duke Alfred for the restoration of that historical building. The Observatory was erected by Duke Ernest II. of Saxe-Gotha and Altenburg in 1787-1791, and owes its existence to a visit of the Duke to England. The erection of the observatory marked an epoch, for it was the first example of a style of architecture suitable for the purpose intended. It was built on natural ground, whereas up to that time people had erected observatories in towers, which were very unsuitable for the object in view. The transit instrument stood between two pillars of porphyry, each of which consisted of one block 9ft. high, 25in. broad, and 25in. thick.

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SIR HENRY GUILDFORD, K.G., PAINTED BY HOLBEIN,
WINDSOR CASTLE COLLECTION.

SIR HENRY GUILDFORD, born in 1489, was the son of Sir Richard Guildford, and became Master of the Horse and Controller of the Royal Household. At the time of the accession of Henry VIII. he was 20 years of age, and was a great favourite with the new king. His ability in the dramatic arts made him very popular at Court, and he designed the pageants with which the revelries at Christmas concluded. One feature of the *fit* in 1511, which he arranged, took the form of a moving mountain, which, in the course of its progress towards the king, opened to set free a party of mummets and morris-dancers. Early in the following year Sir Henry took part in the tournament, signing the articles of challenge, the festivities being held in honour of the birth of a prince. He went to Spain to fight the Moors, and was dubbed knight by Ferdinand at Burgos, in September of that year. The following spring a knighthood was conferred upon him by his own sovereign on the pro-rogation of Parliament. The same year he married Margaret, daughter of Sir. Thos. Bryan, and the King granted him the Manors of Hampton-in-Arden in Warwickshire and Byker in Lincolnshire. Sir Henry Guildford became bailiff of Sutton Coldfield in Warwickshire, and keeper of Sutton Park early in December, and on Christmas Eve Constable and Doorward of Leeds Castle, and Keeper of the Parks of Leeds and Langley in Kent. In 1513 he embarked from Southampton and invaded France, and in May was appointed King's standard bearer. His pay was five shillings a day as joint-captain of the ship the *Sovereign*, in which he crossed the Channel. At the winning of Tournay he was made a knight-banneret. His advance in favour continued its yearly course, and he was a Justice both in Surrey as well as Kent, and before him indictments were found against the unfortunate Duke of Buckingham. Next year the Duke's Manor of Hadlow in Kent was granted to Guildford, who soon after was engaged in Wolsey's train to Calais, and in May, 1522, he went with the Cardinal to meet the Emperor at Dover. He speedily amassed a fortune with lands and manors in various parts. He was assigned lodgings in the King's house, and became one of the Council to consider personal complaints made to Henry VIII. as he passed from place to place. About 1526 he and Sir Thomas Wyatt built a banqueting house for the King at Greenwich. He went with Wolsey in his progress through France in 1527, and was received by Francis as an ambassador. He was actually receiving at this time a pension of 218½ crowns from Francis under the treaty of the Moors. When Cardinal Campeggio came to England in 1528, Sir Henry met the legate on Barham Downs, and arranged for his reception in London. On Dec. 1, 1529, he signed the articles brought against Wolsey in Parliament,

and he affixed his name to the celebrated letter to the Pope, urging him to comply with the King's wishes as regards the Royal divorce. He was, however, strongly opposed to the policy of the King for casting off his wife without Papal sentence. Anne Boleyn consequently warned him that when she became queen she would deprive him of his office of Controller. The King told Guildford to take no notice of what women said, and twice insisted on his taking back his bâton of office; but for a time Sir Henry retired from court. He died in May, 1532, at the early age of 43. He was twice married, but left no issue. His second wife, Mary, daughter of Sir Robert Wotton, survived him, and afterwards married Sir Gawen Carey, or Carew, of Devonshire. These notes of Sir Henry's life are based upon Mr. James Gardier's article in the "Dictionary of National Biography."

PALAZZO CONTARINI FASANI, VENICE.

THIS palace, generally shown as the House of Desdemona, is one of the most exquisite of the small Gothic buildings in Venice, having charming and refined detail of the 14th century, with corded angle shafts richly ornamented window arches and columns, as well as balconies of surpassing traceried panellings projecting on moulded corbels gracefully contrived and built into the walls as in all Mediaeval work, being real structural brackets. "The very pleasant little terrace that jutteth out butteth out from the main building, with many pretty little turned pillars of marble to lean over." Our photographic plate is taken from the last part recently issued of Professor Otto Raschdorff's interesting folio "Palast-Architektur von Oberitalien und Toscana (Venedig)," published by Mr. Ernst Wasmuth, of Markgrafenstrasse, Berlin. The work includes measured drawings and enlarged details, which add to its value. The photographs, too, have figured dimensions of the heights and widths of the buildings and their parts shown in the margins of the prints to give their actual scale. The Palace Pesaro, designed by the architect of the Salute, Baldassare Longhena, about 1650, is herein well represented. Though conceived in a free and somewhat over-ornamented manner, the facade of this palace is eminently suggestive, and has of late served as a model, at least in point of detail, for some of the more up-to-date architects who lead the fashion in types of the Later Renaissance, which now obtains adapters in London with the aid of the sculptor's art advisedly intermixed with constructive detail. The building perfectly expresses that it was designed as the residence of a rich and luxurious noble, for it is ornate from water line to cornice, with its ornament well dominated by the inclosing architectural lines which mark its proportions. The Palace Foscari of 1400, and the Palace Cicogna, of like Gothic style, need only be mentioned as we pass on to the Palace Grimani S. Polo, dated 1475-85, and noted for its beautifully-sculptured capitals. Pietro Lombardo's well-designed and extremely well detailed palace, known as Palazzo Comer-Spinelli, erected in 1500, has some exquisitely refined balconies and mouldings to them. One of the most useful illustrations in the volume is the beautiful staircase of the Scuola di S. Giovanni Evangelista, attributed to Pietro Lombardo, and leading to the church famous for its decorative pictures by Dom. Tintoretto, beautiful even in its squalid misery, as Ruskin says, "the most characteristic example in Venice of the architecture that Carpaccio, Cima, and John Bellini loved." The court of the Scuola has a lovely screen (dating 1481) of grey and white marble and black sandstone, with an eagle surmounting its entrance. The staircase recalls to the mind Mr. T. G. Jackson's Examination Schools at Oxford, though actually of course, it is more refined and exquisitely detailed. The last remaining subject which we shall here notice, from Mr. Wasmuth's book, is the front of the Palazzo Comer della Ca' Grande, now the Prefetoria, a noble work by Jacopo Sansovino, with its beautiful courtyard, inclosing a statue fountain, by Francesco Penso. The building was commenced in 1532, and has rightly been described as a noble specimen of its time. A sheet is devoted to its detail drawn in outline to scale.

NEW BUSINESS PREMISES, DURBAN, NATAL, FOR MESSRS. HARVEY AND GREENACRE.

THE illustration shows the West-street or principal front of Messrs. Harvey, Greenacre, and

Co.'s business premises in Durban, Natal. The site occupied by the building has 147ft. frontage to West and Smith streets, and 303ft. frontage to an adjoining lane, covering over an acre of ground in one of the most valuable parts of the town. The premises are used for the wholesale and retail business of the proprietors, one of the largest of its class in South Africa. The reconstruction of the buildings has spread over a period of almost four years, and has been carried out according to the designs of and under the direction of Mr. W. E. Roberts, architect, Durban. We give a small view of the original store used by the same firm on the same site as erected in 1858. The front towards West-street, shown in our plate illustration, contains the principal branches of the retail business. The building is fitted with electric light, hydraulic lifts for passengers and goods, cash railways, and sprinklers for protection from fire—the tank for the sprinklers being placed in the upper part of the roof of the corner tower.

QUEEN INN, OLDHAM.

THIS building, which has been recently erected in Huddersfield-road, replaces an old beerhouse which stood on the same site. The walls are faced with Accrington bricks, relieved with stone and terracotta dressings, the front wall up to base-course being tiled, and the parapet being entirely of worked masonry. Spacious cellars are provided extending under the whole of the premises, with ground floor throughout consisting of steel joists and concrete, with surface tiled in kitchen, taproom, vestibule, lobbies, &c., bar-parlour being finished in wood block. Walls of vestibule and lobbies have tiled dado, and kitchen glazed-brick dado. The inside joiner's work is of canary wood stained and varnished, ceilings of parlour and bar are of varnished pitchpine. The lead lights, which are of a very effective character, were supplied by Mr. George Wragge, Salford. The whole of the building contract has been executed by Mr. J. W. Kent, Royton, under the superintendence of Charles T. Taylor, A.R.I.B.A., Clegg-street, Oldham.

GOOD INTENT, OLDHAM.

THESE premises, erected in Lees-road, also replace an old beerhouse. The walls are faced with Accrington bricks, finished entirely with red terracotta dressings supplied by Mr. J. C. Edwards, Ruckon, the roof being covered with red tiles by the same maker. The internal finish of the premises is very much similar to the last-named tavern. The whole of the contract has been executed by Messrs. J. D. Blunn, builders, Oldham, under the superintendence of Charles T. Taylor, A.R.I.B.A., Clegg-street, Oldham.

THE COUNTRY HOUSE AND ITS ENVIRONMENT: MONTAIGNE AND LILLIKIN HALLS.

(SEE article on p. 292.)

CHIPS.

THE Society for the Preservation of Pictorial Records of Ancient Works of Art, which has already given nine or ten interesting pictures to the Birmingham Corporation Museum and Art Gallery, has just presented to that gallery a water-colour drawing of St. Paul's Cathedral, a panel about 3½ ft. by 1½ ft., by T. M. Rooke, A.R.W.S.

Mr. G. F. Metzger, of Bath, was, at the last meeting of the Manchester City Council, appointed chief electrical engineer at a salary of £500 a year.

Some well-known artists and lovers of art are endeavouring to raise a fund for the purpose of finishing Alfred Stevens' monument to Wellington in St. Paul's Cathedral by the addition of the crowning feature, the equestrian statue as originally designed by Stevens.

The Merthyr Urban District Council have received a letter from the Local Government Board sanctioning the borrowing of £15,000 for the erection of a block of houses under the Housing of the Working Classes Act.

The foundation-stone of the Devonport Corporation Electricity Works, in course of erection in Newport-street, Stonehouse, was laid on Friday. The site occupies an acre, and was purchased from Lord Mount Edgcumbe for £15,000; the buildings themselves will cost £69,000. Mr. C. Farness is the engineer, and Mr. A. N. Coles the contractor.

Recently at a public auction sale at Liverpool Messrs. Alfred Dobell and Co., timber brokers, sold on behalf of Messrs. Rider and Pinnock a log of mahogany from Sassafras, West Africa, weighing 2½ tons, which realised 9s. 6d. per foot, or a total sum of £534. This is a record price for mahogany from that district.



BUSINESS PREMISES, DURBAN.—THE OLD PREMISES IN 1858.

PROFESSIONAL AND TRADE SOCIETIES.

A. H. H. ASSOCIATION OF IRELAND.—On the 21st ult. Mr. George Coffey lectured on "Optical Refinements in Classic and Mediæval Architecture." Examples were shown from the Parthenon of the Greeks, from Pisa and Siena Cathedrals the most beautiful specimens of Italian and Romanesque and 11th-century work, and, among many other examples, some arcading from Cormac's Chapel at Cashel, where the same peculiar inaccuracies occur; and Mr. Coffey stated his intention of going down to Cashel with McCarthy, the city architect, to unravel more of these refinements. On March 5 Mr. John Good will read a paper on "Some Aspects of the Labour Question."

EDINBURGH ARCHITECTURAL ASSOCIATION.—The members of this Association visited St. Oswald's Church and Bruntsfield House on Saturday. At the former they were conducted over the building by Mr. Henry F. Kerr, A.R.I.B.A., president of the Association and architect for the church, the cost of which, including all furnishings and furniture, amounted to £7,481. By kind permission of Sir George Warrender, Bart., Bruntsfield House was next visited, Mr. J. T. Baillie acting as leader. Mention was made of the various families who have successively owned the estate since Richard Broun—its first recorded owner—who sold it to Sir Alan de Lawedre in 1381, from which time it remained linked with Hatton till the Lauders parted with it to John Fairlie, a descendant of whom sold it to the George Warrender, who was afterwards Provost of Edinburgh under three Sovereigns, and created a baronet in 1715. In viewing the mansion-house, the features of the plan and the exterior were dwelt upon, and appreciation was expressed of the fact that, although additions have from time to time been made, the oldest part of the existing house still clearly displays the architectural characteristics of its period, and is still inhabited by its owners.

THE GLASGOW AND WEST OF SCOTLAND TECHNICAL CHIEF ARCHITECTURAL CHAIRMEN'S SOCIETY.—At the usual meeting of the society, held on Friday, Feb. 23, Mr. John G. Dunn read his paper on the "Practice of Chimney-Stalk and Boiler Building." To insure the stability of a stalk, he said, foundations must be built with best Portland cement, with footings projecting the thickness of the wall, or inverted arches used. The stalk should have a square base, a batter of $\frac{1}{4}$ in. to the foot, with hoop-iron

horizontal ties. The brick courses should be at right angles to the batter, and no port-holes cut after the stalk had taken its bearings. Further remarks were made on the subject of efficiency of draught and architectural treatment, and then the lecturer passed on to the consideration of boiler-setting, explaining carefully the various types of flues, boilers, and fuel economisers, the entire paper being of a most practical nature.

NOTTINGHAM MASTER BUILDERS' ASSOCIATION.—The yearly dinner of the members of the Nottingham Master Builders' Association took place on Feb. 22. Mr. H. Vickers, the president, occupied the chair, and Mr. F. H. Fish the vice-chair. Mr. J. E. Price proposed "The Mayor and Corporation," and coupled the toast with the names of the sheriff (Dr. Brown Sim), and Councillor J. Wright, both of whom responded. In submitting "Success to the Nottingham Builders' Association," Mr. J. W. Woodsend remarked that the association had had a fair amount of success, but they would all like it to have more. The toast was acknowledged by Mr. F. H. Fish, who said the builders were never in a better form for dealing with the men, and the relations between employers and employed were never better. Up to the end of last year they were very much troubled with the plastering section of the trade, but through the instrumentality of that association, which formed a company to deal with the matter, they were enabled to get a very good settlement with the men. Mr. James Wright gave the toast of the "National Federation and Kindred Associations," coupled with the name of Mr. A. Chambers, president, and that of Mr. J. B. Alliot, who both responded. Mr. J. H. Vickers proposed "The Visitors," Mr. John Sulley replying. The health of "The Chairman" was submitted by Mr. W. Edgar, and duly responded to.

THE SOCIETY OF ARCHITECTS.—The fourth ordinary meeting of the Society of Architects, for the session 1900-1901, was held at St. James' Hall, Piccadilly, W., on Thursday, February 21st., and was largely attended. Mr. Ellis Marsland (hon. sec.) occupied the chair, in the unavoidable absence of the president, Mr. Walter Emden. The following gentlemen were duly elected by ballot:—As a member, R. L. Llewellyn, 45, London-road, Sevenoaks, Kent; as students: B. C. E. Bayley, Elm Cottage, Mitcham, Surrey; E. Earnshaw, 31, Castle-street, Southport; J. A. Hallam, 15, St. Mark's-crescent, N.W.; A. F. Jenner, Toorak, New Malden, Surrey. Mr.

G. A. T. Middleton, A.R.I.B.A. (member of Council), then read a paper on "English Architecture of the Nineteenth Century." The paper, which was illustrated by a number of lantern slides, was published in our last issue, p.p. 254-5. A discussion followed, in which Mr. William Cooper, hon. corres. secretary, Mr. J. Williams Dunford, and the chairman took part, and a hearty vote of thanks was accorded the lecturer, who replied to the points raised.

CHIPS.

The Ellerbeck Hospital, Workington, is being warmed and ventilated by means of Shorland's patent Manchester grates, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

Some indignation has been caused in Richmond by the proceedings of H.M. Office of Works, who felled, on Tuesday, every alternate tree in the long row of limes on the west side of Richmond Green, immediately opposite the Old Palace. The tree-trunks are about 18in. in diameter, and they stood eleven yards apart, thus giving a continuous line of shade on that side of the Green, but every other one has now been removed.

In the Court of Arches, on Tuesday, Sir Arthur Charles, Dean of Arches, sat to hear an appeal from a judgment of Dr. Tristram, Chancellor of the Diocese of London, refusing to grant a faculty for the erection in St. Anselm's Church, Pinner, of a wooden screen containing life-size figures of the Saviour on the Cross, the Virgin Mary, and St. John, and estimated to cost £450. After hearing arguments in support of the appeal, his lordship reserved judgment.

The Sunday opening of the Victoria and Albert Museum, South Kensington, the Branch Museum at Bethnal Green, and the Geological Museum, Jermyn-street, will be, until further notice, from two to five p.m.

The mayor of Hampstead, Sir Henry Harben, opened on Thursday in last week a new branch library at West Hampstead, erected from designs of Mr. C. H. Lowe, the borough surveyor. The new building, including the site, has cost about £3,500. The number of free public libraries under the control of the Hampstead Borough Council is now five, including the Central Library, which was erected at the expense of Sir Henry Harben.

The death is announced by cable from Sydney, New South Wales, of Mr. Philip Walter Lenthall, architect, of that city, at the early age of 33 years. Mr. Lenthall, who died on Saturday last, the 23rd inst., was the second son of Mr. Walter Ellison Lenthall.

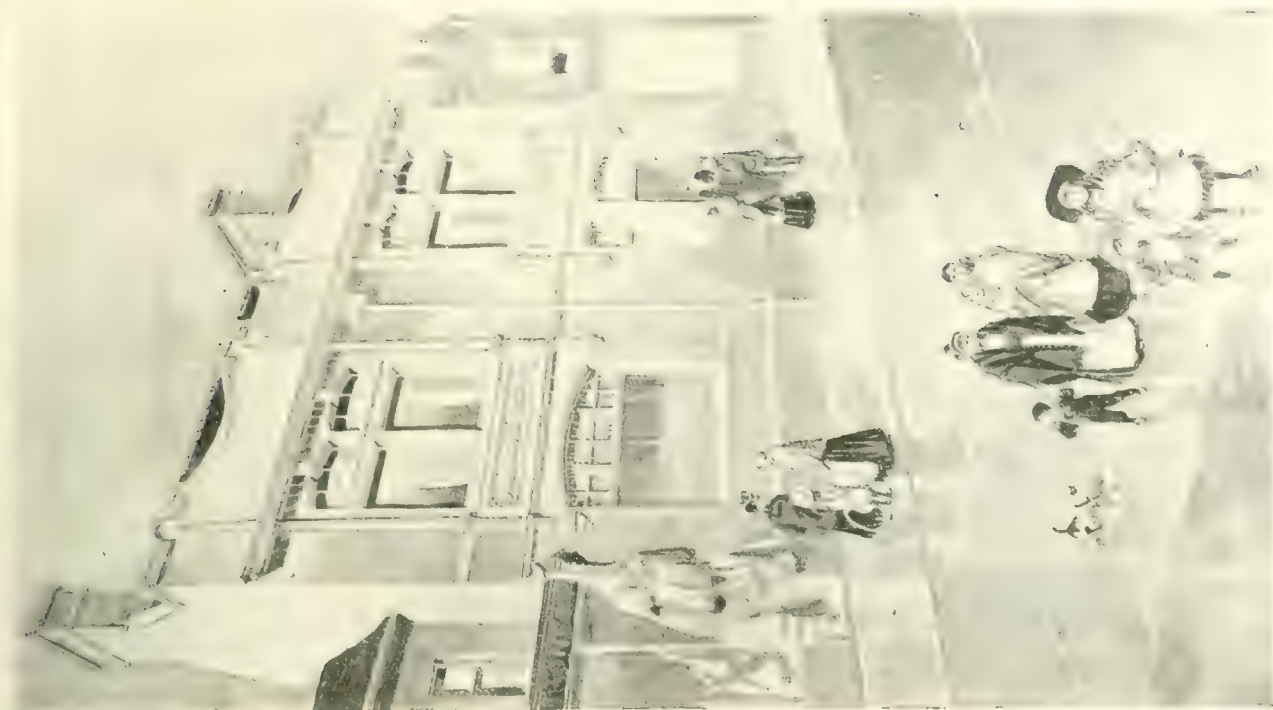
THE BUILDING NEWS, MARCH 1, 1904.







BUSINESS PREMISES, DURBAN, NATAL.
W. F. ROBARTS, ARCHITECT.

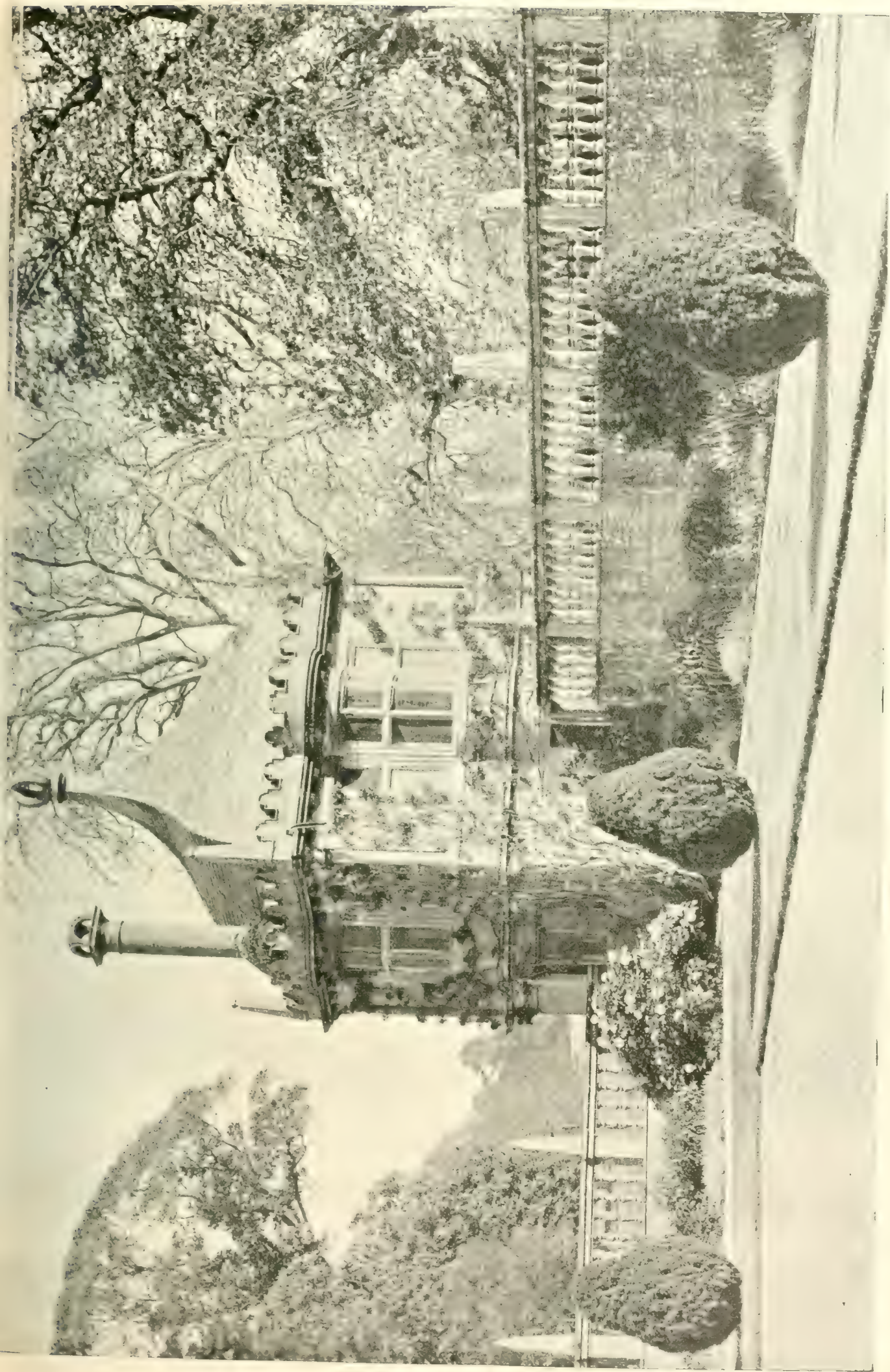


THE QUEEN INN.



THE TOWN INN.

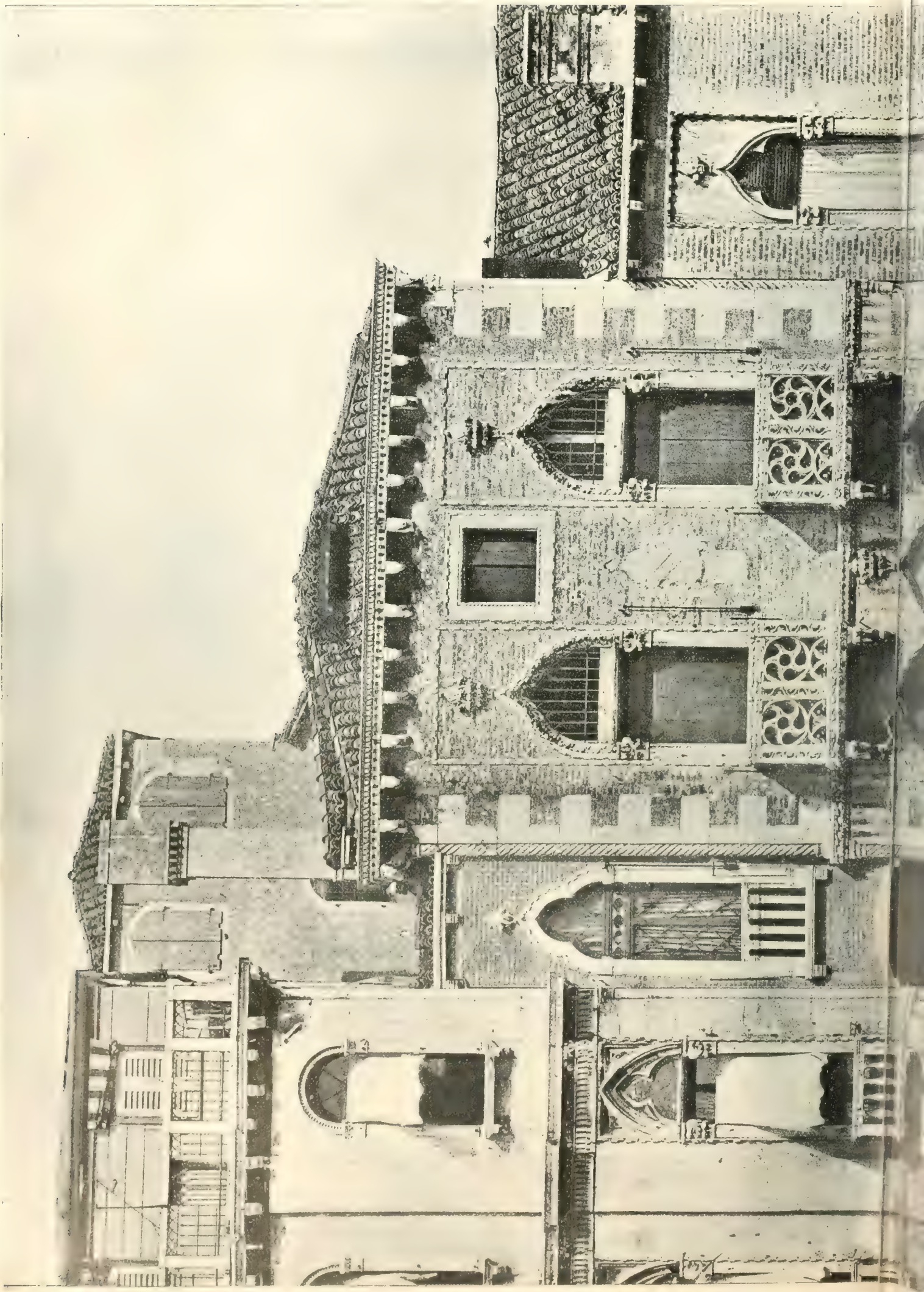
TWO TAVERNS AT OLDHAM.
CHARLES T. TAYLOR, A.R.I.B.A., ARCHITECT.

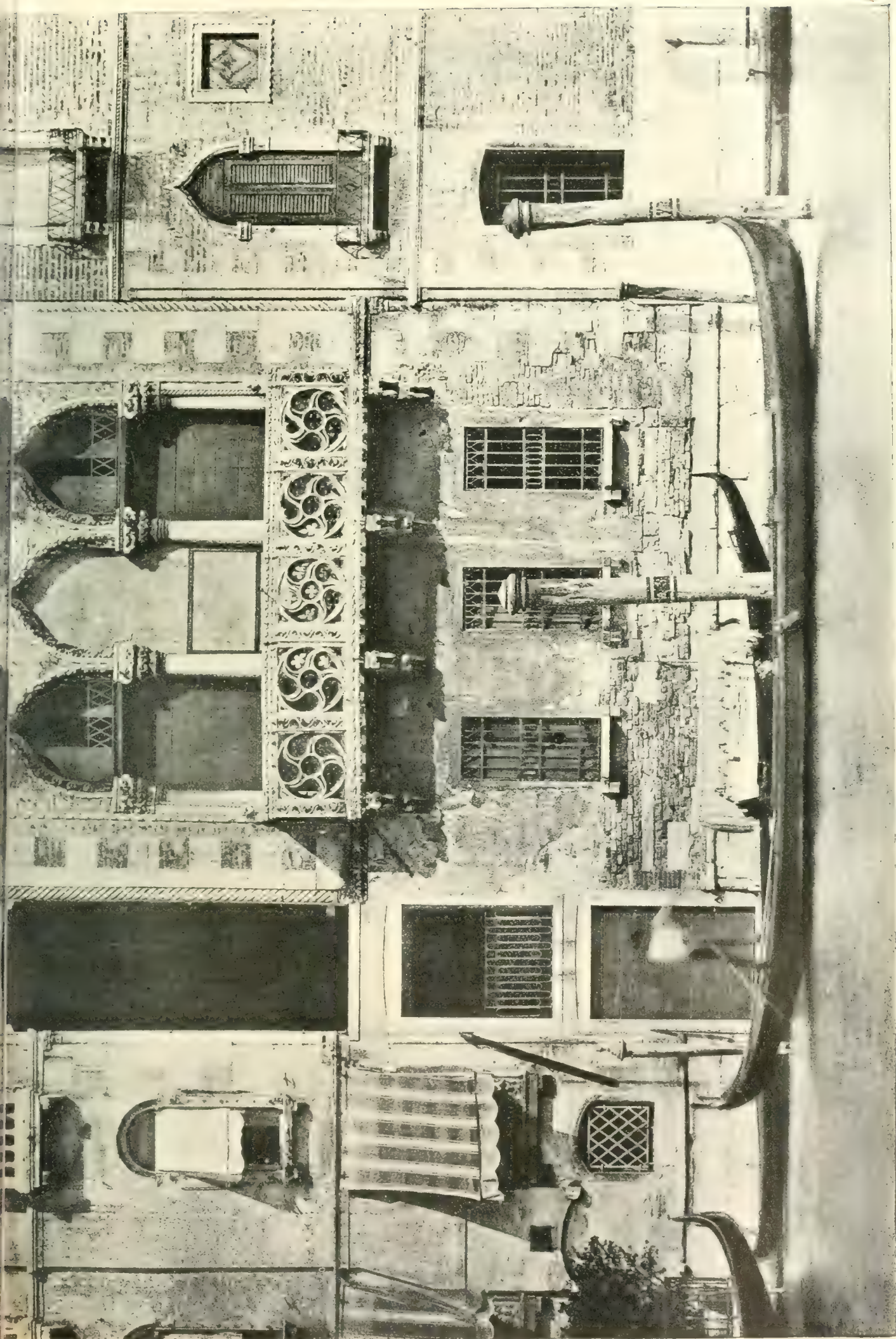


THE GARDEN HOUSE, MONTACUTE, SOMERSET.
GARDENS OLD AND NEW.

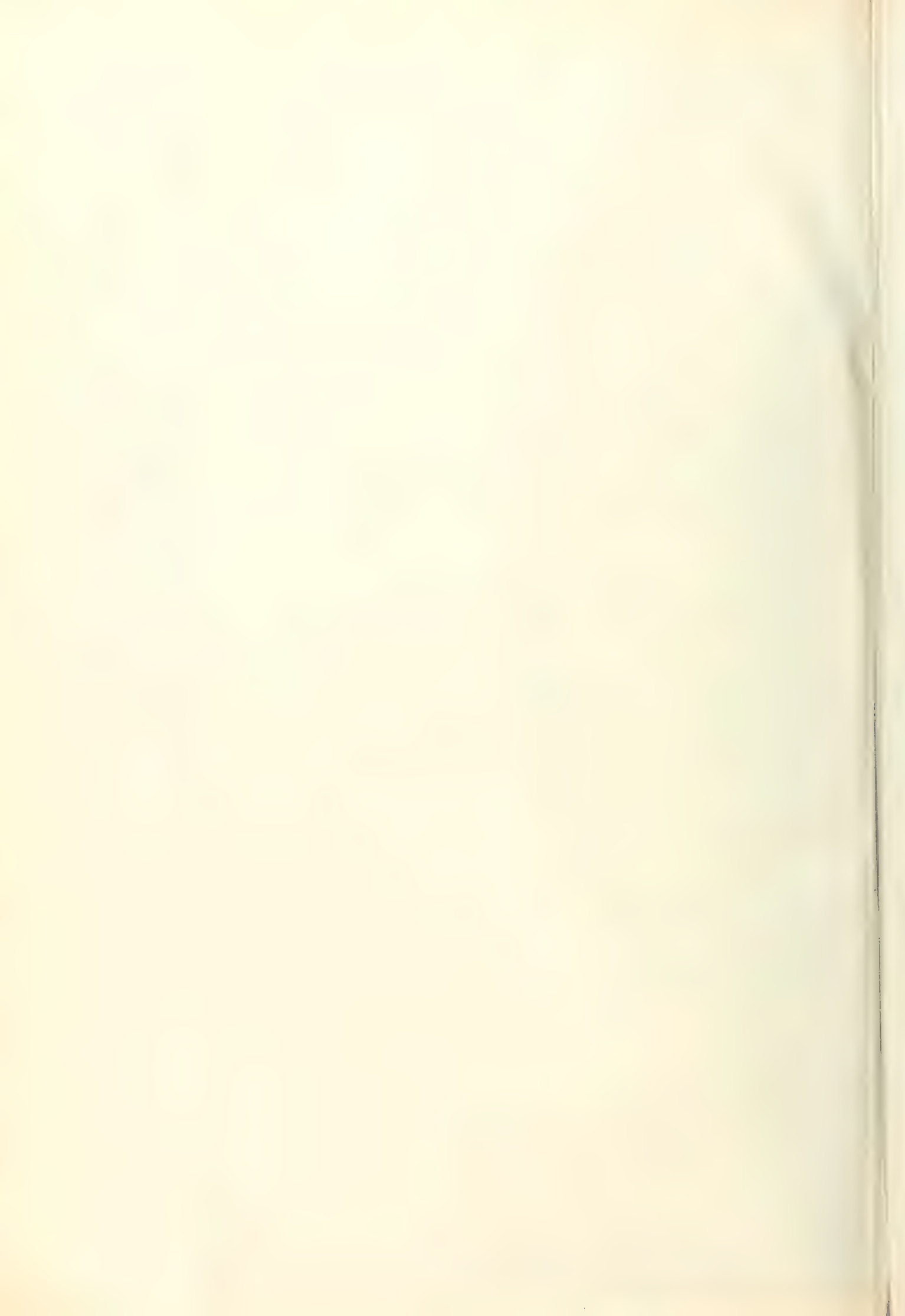








THE CONTARINI-FASAN PALACE, VENICE







PORTRAIT OF SIR HENRY GUILDFORD.
BY HOLBEIN.

"BUILDING NEWS" DESIGNING CLUB.

DESIGNERS REQUIRED. "PERSEVERADZO," "Primus,"
Absque Labore Nihil."

F.R.I.B.A. We are intending at an early date to illustrate the premiated designs for the Swansea Harbour offices, when perhaps you will be able to see why you were "out of it this time" with the ninety other unsuccessful competitors.

Correspondence.

ARCHITECTS' ILLICIT COMMISSIONS.

To the Editor of the Building News.

Sir,—In your coming issue of to-day, you will probably report the case of an architect suing a firm of ironmongers for a certain amount. In the course of the evidence it was alleged that such architect has been in the habit of taking from such firm "10 per cent. commission on all business which he brought them in his capacity as architect," and that he justified such practice as usual and proper. As an architect of long experience, I deny that such practice is either usual or proper. All architects of any standing look upon it as improper, and, in my own case, if a builder, merchant, or manufacturer says "I will allow you such-and-such commission," I say "If you can afford me such commission, you can allow my client the same, and you must reduce your account or estimate by that amount, as I don't take illicit commissions." I think the evidence in this case is very unfair to architects, as the public may think that we are all alike in taking illicit commissions, and I hope the professional papers will take the subject up. There is no doubt that a client can recover from his architect the amount of any illicit commission taken by him, and everyone knows that if Lord Russell of Killowen had lived a little longer, he would have got his Bill passed making such illicit commissions criminal both on the part of giver and receiver.—I am, &c.,
Burlington, Feb. 21. AN ARCHITECT.

THE NATIONAL SILVER MEDAL
DESIGNS FOR CHURCH FURNITURE.

Sir,—We always and instinctively look with kindly eyes at the handiwork of amateurs, and more especially so when the latter happen to be ladies. But, although we possibly tell every young married mother we meet that her particular baby is the handsomest we ever saw, it is well at times to be passingly honest with the sex. Permit me, therefore, to point out that, at a glance, the double sheet of illustrations you favour us with this week of these particular prize drawings are disappointing in the extreme. You somewhat facetiously remark the designs are the sort of thing that find "favour with the Board of Education." If this assumption be correct, we ought to be very sorry for the precious Board in question. It is, albeit, a most humiliating admission. Surely dear old James Kellaway Colling, in his "Art Foliage for Decoration and Ornamentation," published in the middle "sixties," has been the unconscious *motif* for nearly all the suggested carved detail which appears to occupy so prominent a part in the drawings? As for the stone there is no front shown—can it really be assumed that the feeble elevation of the prayer-desk gives that?—in the only place where a section is given, the perfectly flat, low seat, with a tall, sloping back, would represent to the smallest choir boy discomfort unspeakable. The scantiness of thickness in the stuff shown in the prayer-desk is evidently intended to be repeated in the standards. This suggests, at best, the board-school furniture type, such as one sometimes sees prominently displayed in a shop-window in the Strand.

No ecclesiastical tailor, who measures his clerical client for a pair of inexpressibles, and presently afterwards as deftly measures his customer's church for an altar, and who might also aspire to an illustrated catalogue, would think of purloining the design shown for a pulpit.

As one gazes upon these sketches, my mind's eye recalls the picture where Mr. Harry Furniss and myself happened to be co-judges at an exhibition of amateur woodcarving, holden at a fashionable watering-place. At the particular show in question, we mutually decided that as everything in that line was so particularly bad, we would award all the competitors first-class prizes—and so we did.

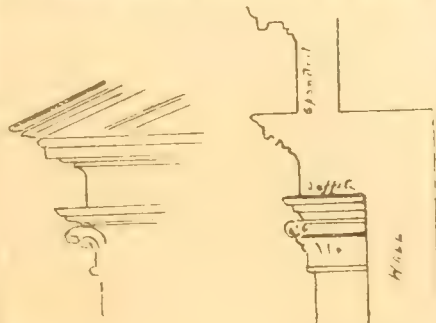
If Sir W. B. Richmond, R.A., and Messrs. Walter Crane and Seymour Lucas, R.A., have no more wholesome ideas upon architectural detail than is surmised by their pronounced approval of the drawings in question, then, for the credit of English architecture generally, and for the protection of the church-loving community in particular, the sooner such R.A.'s and birds of prey leave these things to skilled judges the better.

In common, I am sure, with every other reader possessing a practised eye, I distinctly deny that these designs, viewed from any possible light whatever, can be fairly designated as a "workmanlike set of drawings"—I am, &c.,
Exeter, Feb. 20. HARRIS HEMS.

Intercommunication.

QUESTIONS.

[11688.]—Classic Gables and Pediments.—Would any of your correspondents give their experience of the most modern construction of pedimental Classic gables, where same overhang, and are supported by columns, say, 10 ft. from centre to centre, columns 2 ft. 3 in. at top, spandrel being on face of column as sketch? Is



any special iron construction required to support the soffit or prevent the pediment from going outwards? In other words, to form a counterpoise to tie? Many pediments, as in St. Paul's Cathedral, appear to have iron ties inserted (probably recently) for this purpose. Any hints as to the construction of pediments would oblige.—A R. C. ARCHT. S. S.

[11689.]—West Walton.—Will any reader kindly state some subjects worth measuring or sketching in and about West Walton, Norfolk? The tour will last about ten days.—ST. JOHN.

[11690.]—Tombstone.—Will someone of long experience kindly tell me what would be the best stone to use for a recumbent tombstone in South of England (Wilts)? The design is quite simple, with mouldings, but hardly any carving, and I am anxious to have a stone of good appearance which will stand the weather thoroughly well.—MEMORIAL.

[11691.]—Diaphanites.—Can any reader inform me where the above substitute for stained glass can be obtained? It used to be manufactured by Messrs. Albert and Co., of L. and L. and L. &c.—W. G. L.

REPLIES.

[11677.]—Stone for Window-Sills.—I have found that if Portland stone is too expensive, or not procurable, that Purbeck or Swanage stone will suit. I have used this stone tooled for window-sills in some situations. I do not think white marble would stand the acids and moist smoke-laden atmosphere of some towns—notably London. I should recommend in preference the hard quality of Killer's Hopton-Wood stone, which is very durable and hard, or some good artificial stone. The latter has been largely used for dwellings for the working classes in London, and is very durable, hard, and quite impervious to moisture.—G. H. G.

[11677.]—Stone for Window-Sills.—It may interest Mr. Hems to know that the leading authority in building stones in the United States has frequently, over his full signature, made the same statement with reference to the States marble that I have made, and it has never yet been contradicted. That I should repeat it over my full signature in the States, or anywhere else, is therefore superfluous. The American Consul at Leghorn may know something about building stone, or he may not. In either case, as I do not take my geology from Consular reports, his statistics have no interest for me. Whatever rent the Carrara quarry owners may pay for their quarries, they know how to charge for selected blocks, as United States sculptors and others have to pay them from 12s. to 18s. per cube foot for such blocks in the quarry. This is, I think, rather more than they would pay for the home-quarried article, so that I am safe in saying the Italian marble is not imported on economical grounds, as Mr. Hems asserts. Carrara marble has a waxy, semi-translucent surface when polished, totally unlike the dead white of the best United States marble quarried in Vermont; hence its greater value for ornamental work. I did not say that white marble would stand for fifty years in an exposed place in this country—in fact, I should be sorry to guarantee it for half that time. I have pulled down some thousands of feet of Portland stone used in London buildings from 35 to 200 years old, and amongst the ruins were blocks of good weather stone, and some that were not worth carriage off the site. The red Cor-

hill stone spoken of so disparagingly by Mr. Hems has been used in New York in the Consolidated Stock Exchange, the Galatin National Bank, the Astor Building, Pine-Street, and several others. But I am no advocate for the use of disfigured and sandstones in exposed positions in any climate like ours. I do not need Mr. Hems's assurance as to the marble quarried in the States, being fairly well acquainted with them, but will hasten to where in the States any decorative any marble is raised at all equal to the Travertine brought from Teocalli in the State of Puebla, Mexico, which, I may say, is not used for decorative purposes in any building, and the ornamental stones so called are only marble. How has Mr. Hems's statement that terraces and walls should last for ever? His statement cannot be based on the personal experience of himself or any of his friends. What a loss to London that the entrance of the Theatre Royal bank did not use terraces in facing the retaining wall along the river front!—W. E. M.

[11684.]—Oil Putty for Slates.—The slates would absorb oil from oil-putty. To prevent this, the slates should have been painted with oil-paint wherever the putty was applied. It is most unusual to bed roof-slates in oil-putty. Slates nailed through the shoulders are more securely fixed than if nailed through the heads. Rendering, pointing, or, as it is sometimes called, "torch-ing," with haired mortar inside the slating, will steady the slates and keep wet cut. When slates or tiles are bedded in mortar or cement, it is absolutely necessary that a pat only of the cement be laid under the centre of each, and in no case must it reach the eaves or tails of the slates, for if it does the slating will take in wet. In large slates ("tons") I have had to put a brass screw through the tail of each to the slating batten underneath, and in some cases copper bars along the whole length of the bottom rows of slate! A good "bell cast" will close the lower corners of slates on each other, and thus prevent stripping. The ordinary tilting fillet affords a most methodical protection in this respect, for it seldom rises more than an inch above the plane of the slating battens.—W. E. M.

[11684.]—Bonding of Stone Columns to Brick-work.—In reply to "W. E. M.," to whom my thanks are due, the title of the question was, I thought, sufficiently clear that the columns had to be connected or bonded to a brick wall. The danger mentioned by "W. E. M." I have anticipated. I simply wanted to know the best plan of connecting or bonding the stone, which I intend to be in short heights to the courses of brickwork. "W. E. M." does not give any definite form of tie. My object is to elicit information as to how stone is usually connected to brickwork; but I have not overlooked the further question of how it ought to be connected, as my correspondent has pointed out.—YOUNG ARCHITECT.

[11687.]—Hornbeam.—Is of genus *Carpinus betulus* or (*C. betula*) indigenous British tree, thriving well in poor soil, and attains height of 40 to 50 ft. and circumference of 30 to 4 in.; wood white in colour, close in grain, hard, tough, and of moderate weight; pores minute; medullary rays plainly marked; no sap or albumen; worked up with great advantage for many purposes; useful in husbandry; agricultural implements made of sound healthy wood, wear well, as it stands exposure without much effect, &c. Sometimes in the W. States called ironwood; also blue and water beech.—REVEREND'S PARK.

[11677.]—Hornbeam.—This is a kind of hazel; the wood is white, tough, and stringy. The foliage is like that of the beech; hence it is much used for hedges closely clipped. French hornbeam is imported in logs averaging about 20 ft. cube each. They run from 14 ft. to 33 ft. long, and square from 9 in. to 11 in. They are sold wholesale by Customs String Measure at about 1s. per cube foot.—W. E. M.

MEETINGS FOR THE ENSUING WEEK.

SATURDAY (TO-MORROW).—Edinburgh Architectural Association. Visit to Glasgow International Exhibition Buildings. Leader, Mr. James Miller, I.A., architect, Glasgow. 1.5 p.m. train from Princes-street (Caledonian) Station.

MONDAY.—Society of Arts. "The Bearings of Geometry on the Chemistry of Fermentation," Cantor Lecture No. 4, by W. J. Pope. 8 p.m.

Society of Engineers. "Details of Drainage Construction," by Gerald J. G. Jensen. 7.30 p.m.

Liverpool Architectural Society. "Architectural Treatment of Stone-work," by Beresford Pite.

Leeds and Yorkshire Architectural Society. "Logical Building and its Influence on Design," by Geoffrey Lucas. 8 p.m.

TUESDAY.—Society of Arts. "Early Playing Cards and their Decoration," by Richard Steele. 8 p.m.

Architectural Association of Ireland. "The Labour Question in the Building Industry," by John Good. Grosvenor Hotel, Dublin. 8 p.m.

WEDNESDAY.—T-Square Club Concert. Ladies' Night. Covent Garden Theatre. 8 p.m.

Society of Arts. "Modern Artillery," by Lieut. A. Trevor Dawson, R.N. 8 p.m.

THURSDAY.—Carpenters' Hall Free Lectures. "Celebrated Ancient Buildings," by John Slate, B.A., F.R.I.B.A. 8 p.m.

Civil and Mechanical Engineers' Society. "Authoritative Rules for Unit-Stresses in Railway Girders," by James R. Bell, M.I.C.E. 8 p.m.

FRIDAY.—Birmingham Architectural Association. "Some Thoughts on Planning," by Arthur T. Bolton. 6.45 p.m.

Glasgow Architectural Craftsmen's Society. "The Decay of Building Materials," by James Lochhead. 8 p.m.

Our Office Table.

STEP by step, and more rapidly than could have been expected, in a county so comparatively poor and so largely Nonconformist in tendencies as Cornwall, the late Mr. John L. Pearson's noble conception of a cathedral church for Truro is assuming complete realisation in stone. The choir and transepts, the foundation-stone of which was laid in May, 1880, by our present King, have long been completed and used for service; the nave is now being added under the direction of Mr. Frank L. Pearson, and from the plans of his distinguished father, the whole of the necessary funds having been subscribed by Christmas last, and now the proposal launched last week to erect the central tower as a memorial to Queen Victoria has happily been rendered abortive by the action of an anonymous donor—probably the same one as that to whom the building fund is already largely indebted—who has written this week to Dr. Gott, the Bishop, offering, for the purpose of the completion, the noble sum of £10,000, the entire estimated cost. There now remain to be provided the twin western towers, the cloisters and chapter-house, and the internal fittings for the nave to complete the magnificent scheme.

THE London County Council lighted the Victoria Embankment and Westminster Bridge with electricity for the first time on Saturday night. A generating station has been erected, from designs by Mr. W. E. Riley, superintending architect to the Council, adjoining the Charing Cross Railway Station. The plant, which has been erected from plans by Sir A. R. Binnie, chief engineer to the Council, includes four continuous-current dynamos, each with an output of 70 amperes given out at a pressure of about 500 volts. From the dynamos the current passes to a main switchboard, whence it is distributed in 15 circuits to 67 parapet lamps, each of 1,000 candle-power, and to 80 kerb lamps, each of 2,000 candle-power, the latter being placed along the Embankment kerbs and on Westminster Bridge. To enable some of the lights to be extinguished at midnight, the lamps are alternately on independent circuits. The installation cost £25,000.

THE London County Council decided, on Tuesday, to oppose the Metropolitan District Railway and the British Westinghouse Electric Manufacturing Company's Bills, to spend £12,500 in constructing a river embankment adjoining Wandsworth Park, and to refuse its consent to the construction of such tramway lines by the London United Tramways Company as would be within the county of London. An important report was presented by the Housing of the Working Classes Committee. It dealt with the scheme for the development of Reid's Brewery site, Leather-lane, Clerkenwell, on which accommodation would be provided for 2,614 persons; the arrangement of the Totterdown Fields Estate, Tooting, on which 8,532 persons would be housed; and a new proposal to acquire a large estate at Tottenham for the housing of 42,500 persons. As the last recommendation of the committee involved an expenditure of over £5,000, it stood by standing orders adjourned for a week, but the remainder of the report was adopted.

THE falling of an upright of one of the trilithons at Stonehenge is shortly to be investigated by a special committee, which is being appointed for the purpose of considering the advisability of replacing, in an upright position, the stone that recently fell, as well as that which fell in 1798. The committee is to be composed of members selected from the Wilts Archaeological Society, the Society of Antiquaries of London, and the Society for the Protection of Ancient Monuments, joined by one or two local well-known archaeologists. Sir Edmund Antrobus, the owner of Stonehenge and the surrounding down-land, has appointed his own architect, who will superintend any works that are decided upon; but, fully appreciating the great archaeological interest and value of Stonehenge, Sir Edmund Antrobus is prepared to accept any scheme which the committee may suggest. The committee will meet at an early date, and whatever plan is devised as to the restoration and protection will be immediately carried out.

SIR ARCHIBALD GEIKIE, Director General of the Geological Survey, who retires at the end of this month, will be succeeded by Mr. J. J. Harris Teall, president of the Geological Society and a

member of the Council of the Royal Society. He was educated at St. John's College, Cambridge, obtaining a First Class in Natural Science in 1872, and afterwards the Sedgwick Prize Essay. He was for some years a University Extension lecturer. In 1888 he published a work on "British Petrography," and was subsequently appointed Petrologist to the Geological Survey, a post which he has held to the present time. He is also the author of a number of papers on geological subjects.

In a paper read at the last meeting of the Royal Society, Mr. F. C. Penrose dealt with the subject of "The Orientation of Greek Temples." During a tour in the spring of last year he had been able to examine the sites of six temples, two in Greece and four in Sicily; three of which were fresh cases. Of the latter, one—a very ancient temple—was in the Isle of Delos, the orientation of which agreed with the approximate date, 1530 B.C. The second was a temple recently excavated at Selinus, in Sicily. Here the axis of the temple differed by thirteen minutes from the position which, if arranged for the summer solstice, it should have occupied at the time when it was founded; but this might be explained by the fact that, as the temple was low down in a valley, the position of the rising sun could not be seen, and an error might be made. The third temple, near the theatre of Taormina, suggests that it was not connected with that city, but with the more ancient Naxos, on the sea-coast, about 800ft. below it. Work at the other sites enabled him to obtain more accurate measurements, which brought the actual results into closer conformity with the hypothesis.

Trade News.

WAGES MOVEMENTS.

THE STRIKE IN THE CEMENT TRADE.—On Saturday the directors of the Associated Cement Manufacturers, owners of the large group of factories on the Lower Medway, met representatives of the nearly 500 men who are still out on strike against the reorganisation of works scheme and revised scales of pay. The meeting was at Frindsbury, and the men demanded the continuance of the old terms of employment, which, it was explained by the employers, would be impossible under the altered system of working the factories jointly. The representatives of the men, however, were not prepared to offer other terms on which the strikers would return to their work. After a consultation, the directors announced that they would give the men until Wednesday in the week to consider the matter, with the intimation that if they then remained in the same frame of mind as on this occasion there would be a general lock-out, the kilns of all the factories being shut down for six months.

ABERDEEN.—The operative plasterers have resolved not to resume work under the new conditions as to wages which the employers intimated to them some time ago—viz., a reduction of 1d. per hour, or 7½d. instead of 8½d. per hour, which has hitherto been paid. The men, at a meeting on Saturday evening, unanimously reaffirmed a previous resolution to resist the reduction. By the lock-out 140 men will be thrown idle. One firm, not connected with the Employers' Association, has decided to continue the present wage to their hands.

KIRKCALDY.—The local society of operative masons have received intimation from the Masters' Association that they intend to reduce the wages from 8½d. to 8d. per hour, commencing at the end of May. The society unanimously agreed not to accept the reduction, as they believed the state of trade in the district did not warrant any such reduction, seeing that one-halfpenny per hour had been taken off the wages last year. The operative joiners also received notice of a reduction from 8d. to 7½d. per hour. They also have decided not to accept the reduction. Notices have also been posted at most of the buildings of a reduction of the bricklayers' wages from 9½d. to 9d. per hour.

Mr. H. H. Law, one of the Local Government Board's inspectors, held an inquiry at Prescot, on Friday, into an application by the Prescot District Council for the confirmation of a scheme of improvement under the Housing of the Working Classes Act, 1890.

Bournemouth Town Council, through the generosity of Mr. J. E. Cooper Dean, the ground landlord, are about to construct a grand marine drive and promenade on the West Cliff, also a pleasure and recreation ground, the total cost being about £10,000.

LATEST PRICES.

IRON, &c.			
	Per ton.	Per ton.	Per ton.
Rolled-Iron Joists, Belgian.....	26 0 0	to 26 10 0	
Rolled-Steel Joists, English.....	9 0 0	"	10 0 0
Wrought-Iron Girder Plates.....	9 0 0	"	9 15 0
Bar Iron, good Staffs.....	8 7 6	"	9 7 6
Do., Lowmoor, Flat, Round, or Square.....	20 0 0	"	20 0 0
Do., Welsh.....	5 15 0	"	5 17 6
Boiler Plates, Iron—			
South Staffs.....	7 17 6	"	8 5 0
Best Sneathill.....	13 0 0	"	13 10 0
Angles 10s., Tees 20s. per ton extra.			
Builders' Hoop Iron, for bonding, &c., £8 16s.			
Builders' Hoop Iron, galvanised, £15 10s. 9d. per ton.			
Galvanised Corrugated Sheet Iron—			
No. 18 to 20.		No. 22 to 24.	
8ft. to 8ft. long, inclusive gauge.....	12 15 0	Per ton.	12 10 0
Best ditto.....	12 15 0	Per ton.	13 0 0
Cast-Iron Columns.....	£9 0 0	to £9 10 0	
Cast-Iron Stanchions.....	9 0 0	"	9 10 0
Rolled-Iron Fencing Wire.....	10 5 0	"	10 10 0
Rolled-Steel Fencing Wire.....	8 5 0	"	8 15 0
Galvanised.....	12 0 0	"	13 0 0
Cast-Iron Sash Weights.....	7 5 0	"	8 0 0
Cut Clasp Nails, 8in. to 6in.....	12 0 0	"	13 0 0
Cut Floor Brads.....	11 15 0	"	12 15 0
Wire Nails (Points de Paris)—			
0 to 7 8 9 10 11 12 13 14 15 B.W.G.			
11/- 11/6 11/9 12/3 12/9 13/6 14/3 15/- 16/- per cwt.			
Cast-Iron Socket Pipes—			
8in. diameter.....	£6 17 6	to £7 5 0	
4in. to 6in.....	6 15 0	"	7 0 0
7in. to 24in. (all sizes).....	6 15 0	"	7 0 0
[Coated with composition, 2s. 6d. per ton extra; turned and bored joints, 5s. per ton extra.]			
Pig Iron—			
Cold Blast, Lillleshall.....	105s. 6d.	to 110s.	
Hot Blast, ditto.....	57s. 6d.	to 62s. 6d.	
Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b.—			
Gas-Tubes.....	60 p.c.		
Water-Tubes.....	65 "		
Steam-Tubes.....	60 "		
Galvanised Gas-Tubes.....	47½ "		
Galvanised Water-Tubes.....	45 "		
Galvanised Steam-Tubes.....	40 "		
10cwt. casks, 6cwt. casks.			
	Per ton.	Per ton.	Per ton.
Zinc, English (London mill).....	£25 0 0	to £25 10 0	
Do., Vieille Montagne.....	26 0 0	"	26 15 0
Sheet Lead, 8lb. per sq. ft. super.....	21 0 0	"	22 0 0
Pig Lead, in 1cwt. pigs.....	20 0 0	"	21 0 0
Lead Shot, in 25lb. bags.....	23 0 0	"	24 0 0
Copper Sheets, sheathing and rods.....	89 0 0	"	90 0 0
Copper, British Cake and Ingot.....	75 0 0	"	76 5 0
Tin, Straits.....	122 0 0	"	122 5 0
Do., English Ingots.....	126 0 0	"	127 0 0
Spelter, Silesian.....	17 10 0	"	17 12 6
TIMBER.			
Teak, Burmah.....per load	£10 10 0	to £16 5 0	
Bangkok.....	10 0 0	"	15 5 0
Quebec Pine, yellow.....	4 5 0	"	5 0 0
Oak.....	3 5 0	"	4 12 6
Birch.....	2 15 0	"	5 15 0
Elm.....	4 17 6	"	5 15 0
Ash.....	3 5 0	"	3 12 6
Dantisc and Memel Oak.....	3 0 0	"	4 12 6
Fir.....	3 0 0	"	4 2 6
Waincoat, Riga p. log.....	2 0 0	"	3 5 0
Lath, Dantisc, p.f.....	4 0 0	"	5 15 0
St. Petersburg.....	4 0 0	"	8 10 0
Greenheart.....	7 15 0	"	8 0 0
Box.....	7 0 0	"	15 0 0
Sequoia, U.S.A.....per cube foot	0 1 9	"	0 2 6
Mahogany, Cuba, per super foot			
1in. thick.....	0 0 6	"	0 0 8
Honduras.....	0 0 6	"	0 0 7
Mexican.....	0 0 4	"	0 0 4
African.....	0 0 3	"	0 0 6
Cedar, Cuba.....	0 0 3	"	0 0 3
Honduras.....	0 0 3	"	0 0 3
Satinwood.....	0 0 10	"	0 1 9
Walnut, Italian.....	0 0 8	"	0 0 7
American (logs).....	0 2 3	"	0 4 6
Deals, per St. Petersburg Standard, 120—12ft. by 1½in. by 1½in.:			
Quebec, Pine, 1st.....	£25 0 0	to £30 0 0	
2nd.....	17 10 0	"	21 0 0
3rd.....	12 0 0	"	14 0 0
Canada Spruce, 1st.....	11 10 0	"	14 10 0
2nd and 3rd.....	9 10 0	"	10 0 0
New Brunswick.....	8 10 0	"	11 10 0
Riga.....	8 10 0	"	10 0 0
St. Petersburg.....	11 0 0	"	18 10 0
Swedish.....	12 0 0	"	21 0 0
Finland.....	11 10 0	"	12 10 0
White Sea.....	13 0 0	"	22 10 0
Battens, all sorts.....	5 0 0	"	12 0 0
Flooring Boards, per square of 1in.:			
1st prepared.....	£0 12 6	to £0 19 0	
2nd ditto.....	0 11 6	"	0 14 6
Other qualities.....	0 7 0	"	0 13 6
Staves, per standard M.:			
U.S. ditto.....	£37 10 0	to £45 0 0	
Memel, cr. pipe.....	230 0 0	"	230 0 0
Memel, brack.....	190 0 0	"	200 0 0
OILS.			
Linseed.....per tun	£22 0 0	to £23 10 0	
Rapeseed, English pale.....	26 0 0	"	26 10 0
Do., brown.....	24 15 0	"	25 5 0
Cottonseed, refined.....	19 10 0	"	20 0 0
Olive, Spanish.....	35 15 0	"	39 0 0
Seal, pale.....	25 15 0	"	26 0 0
Cocconut, Cochín.....	22 15 0	"	30 0 0
Do., Ceylon.....	25 15 0	"	26 0 0
Palm, Lagos.....	27 0 0	"	27 5 0
Oleine.....	17 5 0	"	19 5 0
Lubricating U.S.....per gal.	0 7 0	"	0 8 0
Petroleum, refined.....	0 6 3	"	0 6 6
Tar, Stockholm.....per barrel	1 6 0	"	1 6 6
Do., Archangel.....	0 19 6	"	1 0 0
Turpentine, American.....per tun	37 0 0	"	37 5 0

CHIPS.

The town council of Aberdeen have adopted plans for a new electrical station to be built at Dee Village at an estimated cost of £25,000.

The fine Roman pavement recently discovered on the outskirts of Dorchester has been transferred by Italian workmen to the Dorset County Museum, and now covers a large part of the floor of that institution. The cost has been covered by subscriptions. The pavement was given to the Museum by Mr. Alfred Pope, of Dorchester.

H.M. Office of Works have purchased the property in Birkenhead embraced in the area bounded on one side by Oliver-street, on the other by Back Oliver-street, and at each end by the Haymarket and Argyle-street respectively, for the purpose of constructing upon the site a new general post-office for the borough.

The urban district council of Kettering have decided to adopt a scheme of electric lighting, which is also to embrace the question of a refuse destructor and possibly the question of public baths also. The total expenses is estimated at between £30,000 and £40,000.

Mr. J. R. Davidson, of West Ham, E., has been appointed one of the surveyors and sanitary inspectors to the Taunton Rural District Council, the office being vacant through the resignation of Mr. J. J. Goode, who had accepted a similar position at Langport. There were 97 applicants.

Mr. C. D. Taite, the Southport borough electrical engineer, having accepted a similar, but more important, post at Salford, the Southport electricity committee have recommended the appointment of Mr. Downe, second in charge at the Liverpool electricity works, at a commencing salary of £350.

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LIST OF COMPETITIONS OPEN.

Nottingham-Sewerage Scheme for the Parishes of Colwick-Goding and Burton-Joyce
Kewbury-Public Library, North-st. (limit £9,000: Assessors' £50, £20, £20)
Melton Constable-Mission Church (300 places)
Farnley-Illuminated Clock-Tower on the Strand

C. J. Spencer, Clerk, Public Offices, Basford, Nottingham Mar. 25
W. H. Hopkinson, A.M.I.C.E., Boro' Eng., Town Hall, Keighley .. April 30
The Rector, Melton Constable, Norfolk
C. S. Wollen and S. Bulleid, Hon. Secs., 1, Lower-ter., Torquay .. -

LIST OF TENDERS OPEN.

BUILDINGS.

Stanhope-Town Hall
Marzowrie-Alterations on Property, Harriet-row
Newbury-Police Station
Farnham-Four Cottages
Farnham-Chapel
Accrington-Grand Stand, and Boarding-Round Cricket Field
Leeds-Police Station
Newcastle-United Free Church
Egmont-Alterations to Rosewell Garth
Walsley-Car-Sheds, &c., Seaview-road
Farnham-Council Offices, Fire Station, &c.
Widlow-Roofing, &c., Pound House
Pontnewydd-Board School (775 places)
Walsley-Extension of Engine-House
Erfil-Kent Cottages 48 and Superintendent's Lodge
Aberdeen-Additions to Ebenezer Congregational Chapel
Leeds-Black Swan Licensed Premises
Widley-Enlarging Electricity Generating Station
Farnham-Balmoral Hotel 260 rooms
Walsley-Engine and Pump House, Seaview-road
Farnham-Separation Works
Newcastle-Primitive Methodist Chapel
Widley-Chimney Shaft (20ft. high)
Bewley-Two Villas
Welwyn-Additional Infirmary Wards at Workhouse
Preston-Inspector's Cottage and Store
Widley-Passenger Station
Widley-Workshops, Ruffell Park
Stoke-on-Trent-Sliphouse, &c.
Farnham-Generating station, Vally-road
Halifax-Converting Thorpe Buildings into Bank
Worsley-Inspector's Cottage and Store
Farnham-Building and Dynamo Houses at Workhouse
Farnham-Passenger Station, &c.
Farnham-Detached Residence
Plymouth-St. Mary's-Vagrants' Wards at Workhouse
Huddersfield-Fourteen Labourers' Cottages
Farnham-Caretaker's Cottage at Reservoir
Huddersfield-Six Dwelling-Houses
Aberdeen-Additions to Aberaman-Infirmary
Huddersfield-Infirmary, &c., Hillsborough Park
Gateshead-Business Premises, Eastbourne-avenue
Huddersfield-Schoolroom, &c.
Huddersfield-Main Nineteen Villas
Huddersfield-Rectory
Huddersfield-Hill (Chubroom)
Swindon-Stores, &c., Milton-road
Huddersfield-Filling at Finkston Power Station
Huddersfield-School Buildings
Farnham-Catholic Methodist Chapel
Huddersfield-Council Chamber, &c.
Culham, Oxon-New Wing at Diocesan Training College
Gateshead-Victoria Junior School, Teams
Warrminster-Technical Schools
Leigh-on-Sea-Six Villas and Five Terrace Houses
Huddersfield-Kiln-croft School
Aberdeen-Cemetery Chapel
Dagenham, Essex-Dynamo-House at Small-Pox Hospital
Huddersfield-National Physical Laboratory
Strabane-Fifteen Cottages
Alperton-Harrow-Classroom
Alperton-Harrow-Refuse Destructor
Bristol-Superstructure of Avonbank Electricity Works
Strabane-Fifteen Cottages
Bostall Heath, Plumstead-Cottage Homes
Camberwell, S.E.-Infirmary Extension, Brunswick-square
Meltham-Additions to Church Infants' Schools
Belfast-Additions to William-fish Parish Church
Manchester-Extending Retail Fish Market
Halifax-House, Greenrood Estate
Ballymacareilly-Villa
Highbury Vale, N.-Repairing Stonework of St. John's Church
Lancashire-Hotel
Lancashire-School, Bursar-street
Lancashire-Converting Museum into Houses
Huddersfield-Junior Mixed School, Raynham-road
Brentwood-School
Blaugowrie-Enlargement of Manor Farmhouse, Marlee
Belper-Extension to Wards, &c., Isolation Hospital
Farnham-Infant School, Cardinal Estate
Bolton-Enlargement of Head Post-Office
Clay Cross-Six Pairs of Houses
Audenshaw-Wesleyan School, Hooley Hill
Great Yarmouth-Fishing Premises on South Denes
Middlesbrough-Alterations to Business Premises, Newport-rd.
Stifford, Essex-Schools and Cottage Homes
Clay Cross-Dwelling-House
Leeds-Enlargement of Crown Works, Harehills-road

Urban District Council
Glamorgan County Council
Bible Christian Trustees
Cricket Club
Glamorgan County Council
J. E. Syme
Urban District Council
Urban District Council
Urban District Council
Trevelin School Board
Urban District Council
Urban District Council
Townsend and Longbottom
Corporation
Hon. Douglas A. Tollemache
Urban District Council
Guardians
Electricity Committee
John Howard
Guardians
Manchester Corp. Waterworks Com.
Great Western Railway Co.
Corporation
W. Kirkham and Sons
Corporation
Commercial Banking Co.
Manchester Corp. Waterworks Com.
Guardians
Great Western Railway Co.
Guardians
North Dublin R.D.C.
Town Council
Dr. Thomas Finney
Gen. Purposes and Parks Committee
School Board
Rhymney Building Co.
Loyal Farmers' Pride Lodge, I.O.O.
Dr. B. H. Bale
Corporation
Managers
Urban District Council
School Board
Urban Council
School Board
Parish Council
West Ham Town Council
H.M. Commissioners of Works
Rural District Council
United District School Board
Corporation
Electrical Committee
Rural District Council
Woolwich Union Guardians
St. Giles' Guardians
Select Vestry
Corporation
James Osborne
Churchwardens
School Board
School Board
Metropolitan Asylums Board
Joint Hospital District Committee
School Board
H.M. Commissioners of Works
E. A. Baker
Stepney Union Guardian
Arthur W. Midgley

Jno. Thomson, Solicitor, Stanhope Mar. 2
Wm. Cameron, 30, Princes-street, Perth 2
W. E. R. Allen, Deputy Clerk, County Offices, Westgate-st., Cardiff 2
Edmund Jackson, C.E., Tangier Buildings, Whitehaven 2
Frank B. Smith, Architect, Port Talbot 2
James Darbyshire, Secretary, Accrington 2
W. E. R. Allen, Deputy Clerk, County Offices, Westgate-st., Cardiff 2
J. Robertson, Estate Office, Newtyle 2
Edmund Jackson, C.E., Tangier Buildings, Whitehaven 4
J. H. Crowther, Engineer, Great Float, near Birkenhead 4
Paxton Watson, Architect, 1, Adam-street, Adelphi 4
The Town Surveyor, Wicklow 4
Lansdowne and Griggs, Architects, Newport, Mon. 4
J. H. Crowther, Engineer, Great Float, near Birkenhead 4
Charles H. Fry, Clerk, District Council Offices, High-street, Erith .. 4
Rev. Graws Jones, Bryn-gafel, Treconyn, Aberdare 4
Thomas Winn and Son, Architects, 23, Albion-street, Leeds 4
A. Wyllie, Electrical Engineer, Wolverhampton-street, Walsall 4
Thos. Wm. Cotman, Architect, Northgate-street, Ipswich 4
J. H. Crowther, Engineer, Great Float, near Birkenhead 4
J. A. B. Byrnon, Architect, Nuncey-road, Frome 4
J. Caleb Petch, Architect, Bank Chambers, Scarborough 5
Thos. Brown, Town Clerk, Town Hall, Whitehaven 5
J. Howard, Bawtry, Yorks 5
J. T. Sworder, Clerk, Workhouse, Welwyn 5
The Secretary, Waterworks Office, Town Hall, Manchester 5
G. K. Mills, Secretary, Paddington Station, W. 5
A. B. McDonald, City Engineer, City Chambers, Glasgow 5
Scrivener and Sons, Architects, Hanley 5
Frederick Stevens, Town Clerk, Town Hall, Bradford 5
T. C. Hope and Son, Architects, 23, Bank-street, Bradford 5
The Secretary, Waterworks Office, Town Hall, Manchester 5
Herbert Crawshaw, Architect, 13, Regent-street, Barnsley 5
G. K. Mills, Secretary, Paddington Station, W. 5
Barber Hopkinson & Co., Archts., Craven Bank Chambers, Keighley 6
F. A. Clark, Archt., New Town Chambers, Old Town-st., Plymouth 6
John O'Neill, Clerk, North Brunswick-street, Dublin 6
W. B. Seldon, Town Clerk, Bideford 6
J. Berry, Architect, 9, Queen-street, Huddersfield 7
J. Llewellyn Smith, Architect, Aberdare 7
C. F. Wike, O.E., City Surveyor, Town Hall, Sheffield 7
L. H. Armour, Architect, 16, West-street, Gateshead 7
Davies and Moss, Architects, 2, Temple-row, Wexham 7
J. Llewellyn Smith, Architect, 50, High-street, Merthyr Tydfil 7
J. Alex. McConnell, Secretary, Estate Office, Downpatrick 7
Henry Nourish, Illston-on-the-Hill, Billesdon, Leicestershire 8
R. F. Beswick, M.S.A., Architect, 35, Regent-street, Swindon 8
John Young, General Manager, 83, Renfield-street, Glasgow 9
The Architect's Office, Doldremont, Lampeter 9
Roderick Morgan, 215, High-street, Treorchy 9
F. Stevens, Clerk, Beckenham 11
J. G. T. West, M.S.A., The Knowl, Abingdon 11
Thompson and Dunn, Architects, St. Nicholas's Buildings, Newcastle 11
W. H. Hardick, Architect, Warrminster 11
Alfred J. Martin, A.R.I.B.A., 11, Pritwell-sq., Southend-on-Sea 11
J. Landell Nicholson, Architect, 55, Northumberland-st., Newcastle 11
G. L. Hoggarth, Architect, 69, Highgate, Kendal 12
The Borough Engineer's Office, Town Hall, West Ham, E. 12
The Secretary, H.M. Office of Works, Storey's Gate, S.W. 12
J. E. Sharkie, Clerk, Strabane 12
Houston and Houston, Architects, 5, York Buildings, Adelphi, W.C. 12
Harry A. Dancy, Architect, 26, Clarence-street, Gloucester 12
Henry Williams, Architect, 24, Clare-street, Bristol 12
J. E. Sharkie, Clerk, Strabane 12
Church, Quick, and Whincop, Archts., William-street, Woolwich 13
Edwin T. Hall, F.R.I.B.A., Architect, 57, Moorgate-street, E.C. 13
John Kirk and Sons, Architects, Huddersfield 14
W. J. Fennell, M.R.I.A.I., Scottish Provident Buildings, Belfast 14
The City Surveyor's Office, Town Hall, Manchester 14
Walsh & Nicholas, Archts., Lancs & York Bank Chambers, Halifax 15
W. J. Fennell, M.R.I.A.I., Scottish Provident Buildings, Belfast 15
The Vicarage, St. John's Church, Highbury Vale, N. 16
Teather and Wilson, Archts., Andrew's Buildings, Queen-st., Cardiff 16
F. W. Croft, Archt., Victoria Chambers, Victoria-st., Gt. Grimsby.. 19
Wm. Carmichael, Parton, Whitehaven 19
H. W. Dobb, 54, London-wall, E.C. 19
C. and W. Henman, Architects, 64, Cannon-street, E.C. 20
Anderson, Chapman, and Co., Solicitors, Blairgowrie 21
Hunter and Woodhouse, Architects, Belper 21
W. Ralph Low, Architect, 10, Basinghall-street, E.C. 22
The Secretary, H.M. Office of Works, Storey's Gate, S.W. 22
Ernest Oxley, M.S.A., Architect, Clay Cross, Derbyshire
Burton and Percival, Archts., 150A, Stamford-st., Ashton-u-Lyne
George Waller, Architect, Middlegate-street, Great Yarmouth
A. F. Newsome, M.S.A., Architect, Albert-road, Middlesbrough
J. Rider Hunt, 181, Queen Victoria-street, E.C.
Ernest Oxley, M.S.A., Architect, Clay Cross, Derbyshire
Albert E. Dixon, A.R.I.B.A., Architect, 5, Park-lane, Leeds .. -

BUILDINGS—continued.

Middlebrough—Additions to Villa, Loftus	A. F. Newsome, M.S.A., Architect, Albert-road, Middlesbrough	—
Alton—Dwelling-House	Ernest Oxley, M.S.A., Architect, Clay Cross, Derbyshire	—
Grantham—Entrance Lodge, Cottages, Laundry, &c.	Bland and Bown, Architects, Harrogate	—
Middlesbrough—Alterations to Business Premises, Albert-road	A. F. Newsome, M.S.A., Architect, Albert-road, Middlesbrough	—
Eastington—Selling Board School	Thos. A. Welford, Clerk, Sealing, Loftus, R.S.O.	—
Dovercourt—Restaurant and Private Hotel	J. W. Start, F.S.I., Architect, Colchester	—
Leeds—Cotton Workshop	Brooks and Pickup's Offices, Pontefract-lane, Leeds	—
Middlesbrough—Semi-Detached Villas, Phillipsville Estate	A. F. Newsome, M.S.A., Architect, Albert-road, Middlesbrough	—
St. Martin-in-the-Field House	J. M. Fawcett and Son, Architects, 25, Albion-street, Leeds	—
Colchester—Six Houses, Harnett-road	J. W. Start, F.S.I., Architect, Colchester	—
Weyburn-on-Sea—Weyburne Springs Hotel	R. Carter, Architect, Cromer	—
Stanley—Hotel, Front-street	T. Ernest Crossling, Architect, Stanley, Durham	—
Leeds—Alterations to Masons' Arms	G. Fredk. Bowman, Architect, 5, Greek-street, Leeds	—
Talybont-on-Usk, Mon.—Alterations to Benaiah Chapel	J. Yorath, Maesmawr, Talybont, Mon.	—
Harb-down—Two-Kiln East, Brotherhood Farm	W. J. Jennings, Architect, 4, St. Margaret's-street, Canterbury	—
Staleybridge—Liberal Club, Mottram-road	J. Eaton, Sons, and Cantrell, Architects, Ashton-under-Lyne	—
London, E.C.—Warehouse Block, Old-street	Alex. Gordon, M.S.A., Architect, 107, Queen Victoria-street, E.C.	—
Hull—Rebuilding Wheatsheaf Hotel, Prospect-street	Freeman, Son, & Gaskell, Architects, Albert Chambers, Carr-lane, Hull	—
Carlisle—Hotel, Castle-lane	Castiglione and Gibbins, 31, Lowther-street, Carlisle	—
Newchurch, Lancs.—Cottage	F. J. Hobson, Architect, King-street, Rawtenstall	—
South Hildesley—Two Cottages	George Moxon, Architect, 26, Church-street, Barnsley	—
York—Alterations to Branch Stores, Haxby-road	Athron and Beck, Architects, Doncaster	—
Nottingham—Motor-Car Works, Canal-street	W. D. Pratt, Architect, Cauldon Chambers, Long-row, Nottingham	—
Heath, Chesterfield—Cottages (79)	W. M. Ashmore, Architect, New Queen-street, Chesterfield	—
Waterfoot—Enlargement, &c., St. James' School	Rev. J. T. Munn, Vicarage, Waterfoot	—
Outlun—Cathouse at Workhouse	Alfred Clarke, Architect, 126, London-road, Lowestoft	—
Bedding—Cottage	J. Radford, Gwythwynt, Bedding	—
York—Four Houses and Shop, Balmoral-terrace	Athron and Beck, Architects, Doncaster	—
Mosley—Rebuilding St. George's Vicarage	John Brooke, A.R.I.B.A., 18, Exchange-street, Manchester	—
Bury, Lancs.—Shop and Offices, Fleet-street	Openshaw and Gill, Architects, 6, Fleet-street, Bury	—
Newcastle-on-Tyne—Rebuilding Theatre Royal	Joseph Carr, Secretary, 41, Mosley-street, Newcastle-on-Tyne	—
Hollinwood—Terracotta and Steel Work for New School	J. Hilton, Architect, 36, Clegg-street, Oldham	—

ELECTRICAL PLANT.

Bournemouth—Electric Cars (42)	F. W. Lacey, M.I.C.E., Boro' Eng., Municipal Offices, Bournemouth Mar.	2
Bournemouth—Dynamos, &c.	F. W. Lacey, M.I.C.E., Boro' Eng., Municipal Offices, Bournemouth	2
Manchester—Electrical Equipment of 87 Cars	J. M. M'Elroy, Gen. Man., Tramways Dept., Town H., Manchester	4
Luton—Wiring Council-Chamber, Town Hall, Free Library, &c.	The Borough Engineer, Town Hall, Luton	4
Egremont—Overhead Equipment for Tramways (10 miles)	J. H. Crowther, Engineer, Great Float, near Birkenhead	4
Leeds—Underground Conductors	The City Engineer's Office, Municipal Buildings, Leeds	8
Leeds—Trolley Wires and Attachments	The City Engineer's Office, Municipal Buildings, Leeds	8
Southampton—Cables, &c.	Kincaid, Waller, and Manville, 29, Great George-st., Westminster	11
Glasgow—Electric Wharf Crane (3 tons), Prince's Dock	G. H. Baxter, Mechanical Engineer, 16, Robertson-st., Glasgow	11
Bray, Ireland—Plant for Electricity Works	Robert Hammond, M.I.C.E., 64, Victoria-street, Westminster, S.W.	14
Amsterdam—Electrical Plant, &c.	The Direction of Printing Works, Achterburgwal 213, Amsterdam April	1

ENGINEERING.

Stafford—Steam Boiler	Guardians	W. Blackshaw, Borough Hall, Stafford	Mar.	2
East Dereham—Four Purifiers	Urban District Council	B. H. Vores, Clerk, East Dereham	2	2
Duncey—Dyke Works (3,550 lineal yards)	Guardians	Davidson and Garden, 12, Dece-street, Aberdeen	2	2
Romney—Flushing Works at Workhouse Infirmary	Waterworks Committee	John Allsop, Clerk, The Abbey, Romsey	2	2
Lincoln—Deep Boring at Boultham	Urban District Council	P. Griffith, A.M.I.C.E., Eng., 54, Parliament-st., Westminster, S.W.	4	4
Wicklow—Six Timber Pile and Sheet Groynes	Rural District Council	John Pansing, Town Surveyor, Church-hill, Wicklow	4	4
Ranby, Horncastle—Wooden Bridge over River Bain	Town Council	W. H. Holmes, Surveyor, Horncastle, Lincs	4	4
Kirkintilloch—Storage Reservoir on Corrie Burn	Urban District Council	Wm. R. Copland, C.E., 146, West Regent-street, Glasgow	4	4
Wallasey—Lancashire Boiler, &c.	Urban District Council	J. H. Crowther, Engineer, Great Float, near Birkenhead	4	4
Carrickfergus—Extending Sea Wall and Roadway	Urban District Council	James Boyd, Clerk, Town Hall, Carrickfergus	4	4
Amble—Water Pipes, &c.	Urban District Council	W. Gibson, Surveyor, 31, Queen-street, Amble	5	5
Portland—Reconstructing Viaduct	Great Western Railway Co.	G. K. Mills, Secretary, Paddington Station, W.	5	5
York—Steam Supply	Guardians	Penty and Penty, Architects, Lendal Chambers, York	6	6
Stockport—Condensers at Electricity Works	Gas and Electricity Committee	The Chairman, Gas Department, Portwood, Stockport	6	6
Rochdale—Laundry Engineering Works	Baths Committee	James Leach, Town Clerk, Town Hall, Rochdale	6	6
Nelson, Lancs.—Livesey Washer	Gas Committee	A. Allan, Engineer, Gasworks Nelson	7	7
Manchester—Three Steel Lancashire Boilers	Gas Committee	C. Nickson, Supt., Gas Department, Town Hall, Manchester	7	7
London, S.W.—Fire and Watering-Engines and Gear	Corporation	The Director of Navy Contracts, Admiralty, Whitehall, S.W.	7	7
Manchester—High-Pressure Hydraulic Lift, Poland-street	Urban District Council	C. Nickson, Supt., Gas Department, Town Hall, Manchester	7	7
Hull—Steel Lancashire Boiler	Corporation	A. E. White, City Engineer, Town Hall, Hull	8	8
Tavistock—Girder Bridge over the Tavy	Rural District Council	John Northey, Surveyor, Lake, Linton	9	9
Glasgow—Hot-water Heating, Possilpark and Langside Depots	Corporation	John Young, General Manager, 89, Renfield-street, Glasgow	9	9
Stokeley, Luton—Water-Supply Works	Luton Rural District Council	B. B. Franklin, Surveyor, 21, Market-hill, Luton	11	11
Bewdley—Two Service Reservoirs and Water Mains (9½ miles)	Corporation	R. E. W. Berrington, Civil Engineer, Wolverhampton	11	11
Aughrim, Ireland—Water Supply	Rathfrum Rural District Council	B. Manning, Clerk, Board Room, Workhouse, Aughrim	11	11
Santander, Spain—Dredger	Works Committee	The Commercial Department of the Foreign Office, Whitehall, S.W.	11	11
Stokeley, near Luton—Water-Supply Works	Luton Rural District Council	B. B. Franklin, Surveyor, 21, Market-hill, Luton	11	11
Wargrave—Mains Extension	Wokingham Rural District Council	John F. Sargeant, Clerk, Wokingham	12	12
Aberdeen—Fuel Economiser, &c.	Electric Lighting Committee	J. Alex. Bell, City Electrical Engineer, Cotton-street, Aberdeen	15	15
Warrington—Pumping Plant	Corporation	James Deas, A.M.I.C.E., Municipal Offices, Warrington	15	15
Bollington—Pipe-Laying, &c. (2½ miles)	Urban District Council	W. H. Radford, C.E., Albion Chambers, King-street, Nottingham	16	16
Trowbridge—Heating and Ventilating Technical Institute	Corporation	H. Ledbury, Sec., Timbrell-street, Trowbridge	16	16
Lowestoft—Removal of Old Sewer Outfall at Ness Point	Corporation	G. H. Hamby, A.M.I.C.E., Boro' Engineer, Town Hall, Lowestoft	16	16
Dundee—Sea-wall (880 yards)	Town Council	Wm. Mackison, C.E., Municipal Offices, Commercial-street, Dundee	18	18
Cardiff—Steam Pipes, &c.	Corporation	Arthur Ellis, M.I.E.E., Old Post Office Buildings, Cardiff	18	18
Belfast—Three Timber Jetties, Musgrave Channel	Harbour Commissioners	G. F. L. Giles, Harbour Engineer, Belfast	18	18
Llanfair and Welshpool—Light Railway (about 9 miles)	Cambrian Railway Co.	A. J. Collin, Engineer, Oswald-road, Oswestry	19	19
Pontypool—Widening and Repairing Bridge over Afon Llywd	Urban District Council	David J. Lougher, Engineer, Bank Chambers, Pontypool	20	20
Ilkerton—Widening Gallows Inn Bridge	Derbyshire County Council	J. Somes Story, County Surveyor, County Offices, Derby	20	20
Dorchester—Sewage Purification Works	Town Council	G. J. Hunt, Borough Engineer, Guildhall, Dorchester	29	29
Crosthwaite—Widening Smithy Bridge	Cumberland County Council	Geo. Jos. Bell, County Surveyor, The Courts, Carlisle	April 11	11
Smithwaite—Stone Bridge across St. John's Beck	Cumberland County Council	Geo. Jos. Bell, County Surveyor, The Courts, Carlisle	11	11
Rosario—Harbour Works	Argentine Government	The Commercial Department of the Foreign Office, Whitehall, S.W.	May 10	10
Warrington—Low-Pressure Heating for Police Buildings	Corporation	Cackett & Burns Dick, Archts., 24, Grainger-st., Newcastle-on-T.	—	—
Brandon—Heating Co-operative Stores	Corporation	Wm. Perkins, M.S.A., Architect, Bishop Auckland	—	—
Nevin Sea-wall 20ft., and Dock Enlargement	Corporation	Smith and Sidebotham, C.E., 1, Princess-street, Manchester	—	—
Woolston, Southampton—Extension of Jurd's Wharf	Corporation	E. Cooper Poole, A.M.I.C.E., 4, Portland-street, Southampton	—	—
Newhaven—Pile Driving, &c.	Corporation	F. J. Rayner, Engineer, 8, High-street, Newhaven, Sussex	—	—

FENCING AND WALLS.

Lowestoft—Timber Protection Wall (1,780 yards)	Town Council	Geo. M. Hamby, A.M.I.C.E., Boro' Engineer, Town Hall, Lowestoft Mar.	2	2
Radcliffe—Walls and Railings at Public Park	Urban District Council	W. L. Rothwell, Surveyor, Radcliffe, Lancs	2	2
Fulham—Boundary Wall at Electricity Works, Townmead-road	Borough Council	C. Botterill, A.M.I.C.E., Boro' Sur., Town Hall, Walham Green	6	6
Wanstead—Boundary Walls and Undimbleable W.I. Fencing	School Board	John T. Bressey, 71, Bishopgate-street Within, E.C.	11	11
Kettering—Wrought-Iron Fencing and Gates	Urban District Council	T. R. Smith, Surveyor, Market-place, Kettering	11	11
Dungarvan—Rebuilding Quay Wall (135ft.)	Urban District Council	Thomas McCarthy, Town Clerk, Dungarvan	11	11
Uxbridge—Oak Fencing	Burial Board	Wm. L. Eves, A.R.I.B.A., 54, High-street, Uxbridge	12	12

FURNITURE AND FITTINGS.

Ramsay, near Harwich—Decks, &c.	School Board	G. D. Hugh-Jones, Clerk, Harwich	Mar.	6
Widnes—Infectious Diseases Hospital	Corporation	H. S. Oppenheim, Town Clerk, Town Hall, Widnes	16	16
Newport, Mon.—New Hospital	Directors	J. K. Stone, Secretary, 26, Dock-street, Newport, Mon.	—	—

PAINTING.

Stanhope—Town Hall	Urban District Council	Jno. Thomson, Solicitor, Stanhope	Mar.	2
Northampton—Passenger Station	Midland Railway Co.	The Company's Architect, Cavendish House, Derby	2	2
St. George-in-the-East—Casual Wards, Raine-street, E.	Guardians	G. A. Wilson, Vestry Hall, Cable-street, St. George-in-the-East	2	2
Newtyle—United Free Church	Midland Railway Co.	J. Robertson, Estate Office, Newtyle	2	2
Derby—Twelve Station Buildings	Sanitary Committee	The Company's Architect, Cavendish House, Derby	2	2
Manchester—Labourers' Dwellings	Townsend and Longbottom	The City Surveyor's Office, Town Hall, Manchester	4	4
Leeds—Black Swan	J. Howard	T. Winn and Son, Architects, 92, Albion-street, Leeds	4	4
Bawtry—Two Villas	Baths Committee	J. Howard, Bawtry, Yorks	5	5
Darlington—Public Baths	Corporation	H. G. Stevenson, Town Clerk, Darlington	6	6
Manchester—Iron Bridges on Aqueduct, Ambleside to Agecroft	Corporation	The Secretary, Waterworks Offices, Town Hall, Manchester	6	6
Leeds—Bandstand, Fountain, Lamp Arches, Seats, &c.	Visiting Committee	The City Engineer's Office, Municipal Buildings, Leeds	8	8
Burnwood—Asylum Buildings	Parish Council	Walter H. Cheadle, County Surveyor, Stafford	9	9
Arnscliffe—Cemetery Chapel	Electricity Committee	G. L. Hogarth, Architect, 69, Highgate, Kendal	12	12
London, E.C.—Small Public Hall	Electricity Committee	T. B. Hall, Club Union Buildings, Clerkenwell-road, E.C.	—	—
Carlisle—Arc Lamp-Posts and Brackets (47)	Electricity Committee	C. D. Burnet, A.I.E.E., City Electrical Engineer, James-st., Carlisle	—	—
Brantry—Parish Church	Electricity Committee	The Rev. Gordon Scott, Brantry Glebe, Dunganon	—	—

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PLUMBING AND GLAZING.

Glasgow—Workshops, Ruelall Park	Corporation	A. B. McDonald, City Engineer, City Chambers, Glasgow	Mar. 5
Halifax—Houses, Greenroyd Estate	Corporation	Walsh and Nicholas, Architects, L. and Y. Bank Chambers, Halifax	15
Blairgowrie—Manor Farmhouse, Marlee	Corporation	Anderson, Chapman, and Co., Solicitors, Blairgowrie	20

ROADS AND STREETS.

Earlsheaton—Street Improvement	Southill Nether U.D.C.	J. H. Ward, Surveyor, Council Offices, Earlsheaton	Mar. 2
Beverley—Street Works, Park-lane	Corporation	J. Willis Mills, Town Clerk, Beverley	4
Larne, Ireland—Road Works	Rural District Council	William Hay, Clerk, Larne, Ireland	4
Chingford—Making-up Warren-road	Urban District Council	Walter Stair, Surveyor, 14, The Parade, Chingford	4
Eckington—Reconstructing Pathway	Borough Council	Francis Shaw, 10, Church-street, Eckington	4
Wandsworth, S.W.—Making-up and Paving Lydden-pi	Rural District Council	H. G. Hills, Town Clerk, Council House, Wandsworth, S.W.	5
Maidstone—Road Maintenance and Repair (One Year)	Rural District Council	Fredk. W. Luck, County Surveyor, 86, Week-street, Maidstone	5
Tottenham—Wood-Paving West Green-road	Urban District Council	W. H. Prescott, C.E., Coombes Croft House, 712, High-rd., Tottenham	5
Wandsworth, S.W.—Making-up and Paving Bartop-road	Borough Council	H. G. Hills, Town Clerk, Council House, Wandsworth, S.W.	5
Harrow—Roads and Sewers, Headstone Estate	Urban District Council	Clarke and Charles, Harrow Estate Office, Harrow	6
Seaford—Paving Works	Urban District Council	B. A. Miller, 3, Clinton-place, Seaford	6
Pentre—Street Improvement Works	Rhondda Urban District Council	W. J. Jones, Surveyor, Council Office, Pentre	6
Wealdstone—Roads and Sewers, College Estate	Urban District Council	Clarke and Charles, Harrow Estate Office, Harrow	6
Felixstowe—Making-up Streets	Urban District Council	Geo. S. Horton, Surveyor, Town Hall, Felixstowe	6
Southend-on-Sea—Making-up Street	Corporation	Alfred Fidler, A.M.I.C.E., Borough Surveyor, Southend	7
Huddersfield—Forming Two Streets	Urban District Council	John Kirk and Sons, Architects, Huddersfield	7
Ealing, W.—Making-up Manor-road	Urban District Council	Charles Jones, M.I.C.E., Engineer, Public Buildings, Ealing, W.	7
Rishworth—Widening Park-road	Urban District Council	A. H. Lloyd, Surveyor, Rishworth	7
Littlehampton—Brick Paving, &c.	Urban District Council	H. Howard, F.S.I., Surveyor, Town Offices, Littlehampton	7
Andover—New Road, &c.	Urban District Council	Allan Herbert, Estate Agent, Andover	9
Bromley, Kent—Widening London-lane	Urban District Council	F. H. Norman, Clerk, District Council Offices, Bromley	12
Leeds—Asphalting (1,350 square yards), Holbeck Moor	Corporation	The City Engineer's Office, Municipal Buildings, Leeds	12
Barking, Essex—Levelling, &c.	Urban District Council	C. F. Dawson, Surveyor, Public Offices, Barking	12
South Shields—Wood-Paving King-street and Russell-street	Corporation	S. E. Burgess, M.I.C.E., Boro' Engineer, Chapter-row, South Shields	13
Sunbury-on-Thames—Kerbing, &c.	Urban District Council	Harold F. Coates, Surveyor, Sunbury-on-Thames	18
Tynemouth—Laying Cement Concrete Footpaths	Corporation	John F. Smillie, Borough Surveyor, Tynemouth	19
Crothwaite—Road Works	Cumberland County Council	Geo. Jos. Bell, County Surveyor, The Courts, Carlisle	April 11
Ollerton, Newark-on-Trent—Roadmaking and Repairing	Rufford Hunt Committee	H. Hill, Thoresby Park, Ollerton, Newark	—

SANITARY.

Radcliffe—Drainage Works at Public Park	Urban District Council	W. L. Rothwell, Surveyor, Radcliffe, Lancs	Mar. 2
Loughborough, Leics.—Sewer, &c.	Borough Council	A. H. Walker, A.M.I.C.E., Boro' Sur., Town Offices, Loughborough	2
Paddington, W.—Public Convenience, Edgware-road	Parks Committee	The Surveyor's Department, Town Hall, Paddington, W.	4
Darlington—W.C.'s, Urinals, &c., Public Park	Urban District Council	The Borough Surveyor, Town Hall, Darlington	4
Lurgan, Ireland—Sewer, Lough-road	Urban District Council	Fred W. Pollock, Town Clerk, Town Hall, Lurgan	4
Pontypool—Sewers	Urban District Council	The Surveyor, Town Hall, Pontypool	5
Clacton-on-Sea—Sewer, &c.	Rural District Council	A. R. Robinson, Surveyor, Town Hall Buildings, Clacton-on-Sea	6
Bitterne—Sewers, &c.	Corporation	F. Wentworth-Shields, M.I.C.E., 1, Cranbury-road, Southampton	7
Southend-on-Sea—Sewers, Park-street and Queen's-road	Urban District Council	Alfred Fidler, A.M.I.C.E., Borough Surveyor, Southend	7
Cannock—Sewage Works	Corporation	C. Lorraine Whitehead, C.E., M.E., Cannock, Staffs	7
Harrogate—Pipe Sewer (1,000 yards of 12in.)	Urban District Council	F. Bageshaw, C.E., Borough Engineer, Municipal Offices, Harrogate	7
Littlehampton—Convenience at Sluice-House	Urban District Council	H. Howard, F.S.I., Surveyor, Littlehampton, Sussex	7
Ossett, Yorks—Sewerage Works	Guardians	W. Brook, Town Clerk, Ossett	8
Guildford—Surface-Water Drainage for the Workhouse	Urban District Council	Peak and Lunn, Surveyors, High-street, Guildford	8
Worsley, Lancs—Sewers	Town Council	J. T. Proffitt, A.M.I.C.E., Sur., Hilton-lane, Walkden, Manchester	11
Kirkcaldy—Sewer, &c.	Rural District Council	William D. Sang, C.E., Kirkcaldy	14
Evesham—Three New Culverts	Urban District Council	Edward Wadams, Clerk, Union Offices, Evesham	16
Rugby—Sewers, &c.	District Council	Pritchard, Green, and Co., Engs., 37, Waterloo-st., Birmingham	16
Prestwich—Sewering and Paving Robert-street	Town Council	L. A. Orford, Clerk, Bury New-road, Prestwich	18
Dorchester—High and Low Level Main Intercepting Sewers	Urban District Council	G. H. Hont, Borough Engineer, Guildhall, Dorchester	26
Hippurholme—Sewage Tank	Urban District Council	G. H. Elliott, Architect, Lightcliffe	—

STEEL AND IRON.

Keighley—Socket Pipes (560 yards of 12in.)	Gas Committee	John Laycock, Engineer, Keighley	Mar. 4
Castleblayney, Cistern, &c., at Workhouse	Guardians	Peter Cahill, C.E., Dundalk	5
Shoreditch, E.C.—Steel and Iron Work, Whiston-street	Borough Council	C. N. Russell, Electrical Light Station, Coronet-street, Hoxton N.	6
London, E.C.—Bridgework (twenty-five spans of 20ft.)	Burma Railways Co., Ltd.	The Company's Offices, 76, Gresham House, Old Broad-street, E.C.	6
Barnsley—C.I. Pipes (5000 tons)	Corporation	T. and C. Hawkesley, Civil Engineers, 30, Great George-street, S.W.	7
Workington—Cast-Iron Pipes (5,000 tons)	Corporation	Joseph Eden, A.M.I.C.E., 58, Pow-street, Workington	11
Norwich—Cast and Wrought Ironwork at Cattle Market	Markets Committee	Arthur E. Collins, M.I.C.E., City Engineer, Guildhall, Norwich	12
Copenhagen—Rails and Fastenings (4,300 tons)	Danish State Railways	The Engineer-in-Chief, 11, Colljornsestgade, Copenhagen B	12
Bollington—Cast-Iron Pipes (2½ miles of 3in. and 4in.)	Urban District Council	W. H. Radford, C.E., Albion Chambers, King-street, Nottingham	16
Christiania—Axes and Wheels (170, Wheel-Runs 200)	Norwegian State Railway	Railway Station Offices, Christiania	21
Soerabaya, Java—Asphalted C.I. Flange Pipes (3,000 tons)	Dutch Ministry for Colonies	Martinus Nyhoff, Bookseller, The Hague	27
Pietermaritzburg, Natal—Water-Pipes, &c.	Corporation	Ford Bros., 12, Southampton-street, Fitzroy-square, London	April 8
Southwick, Brighton—Steel & Ironwork, Electrical Power House	Town Council	E. J. Tiltstone, Town Clerk, Town Hall, Brighton	26

STORES.

Whitby, Northumberland—Whinstone, &c.	Urban District Council	J. Moore, Assistant Surveyor, Council Offices, Whitby, R.S.O.	Mar. 2
Doncaster—Dross and Granite (One Year)	Rural District Council	W. R. Crabtree, Highway Sur., Union Offices, High-st., Doncaster	2
Penryn—Blue Elvan Quarried Stone (1,500 tons)	East Kerrier Rural District Council	G. Appleby Jenkins, Clerk, Penryn	2
Wolverhampton—Portland Cement, Paving Bricks, &c. (1 Year)	Streets Committee	J. W. Bradley, A.M.I.C.E., Boro' Engineer, Wolverhampton	4
Abingdon—Hart-hill Stone	Rural District Council	E. M. Challenger, Clerk, Council Offices, 59, Sturt-street, Abingdon	4
St. Pancras, N.W.—Roadway and Footway Materials (1 Year)	Vestry	W. Nisbet Blair, C.E., Boro' Eng., Town Hall, Pancras-rd., N.W.	4
Manchester—Ventilating Grids and other Castings (One Year)	Corporation	The Manager of the House Drainage Department, Manchester	4
Armagh—Whinstone 500 tons	Urban District Council	Thomas G. Peel, Town Clerk, Armagh	4

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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

VOL. LXXX.—No. 2409.

FRIDAY, MARCH 8, 1901.

MODERN SPECIALISM.

A SELECTIVE process—a method of defining more precisely the functions and uses of buildings, and of their plan and design—has been no less active in architecture than in the natural world. In the latter it is called the “survival of the fittest.” The evolution of architectural forms has been controlled by similar laws, though the average professional man goes on in his own thoughtless way of designing buildings according to precedent or rule, without thinking of the inevitable laws that are at work ruling his work. At every turn he is interrupted by the demands of his client or the requirements of the law and its officials, of the manufacturer who is carrying out his details, and in a hundred other ways, and his work or plan is the result of these influences. Everything is tending to make his design more exact or utilitarian, more agreeable to modern requirements and tastes; but he heeds it not in his shortsightedness. Specialisation is the outcome of all these factors, and it is one of the principles or processes of which the architect would do well to make a study by the light of past experience. Blunders in plan, mistakes in construction, the misuse of material are common enough, mainly because this principle has been altogether neglected. Let the architect study the problems of living in cities, the varying aspects of social life, the demands of business and of pleasure, the wants of the poor and the sick, the statistics and reports of commissions of Poor Law guardians, the Local Government Board, elementary school boards, and the like, and they will instruct him more than volumes of architectural literature.

Plan has been much specialised during the last forty years to suit the various uses which it subserves. Even the planning of the ordinary dwelling-house has received some attention at the hands of competent architects. Of late years we have seen many attempts to adapt the several functions of the house to the habits and requirements of its occupants—such, for instance, as the adaptation of the kitchen offices, the provision of serving lobbies between the kitchen and dining-room, of hoisting-lifts from basement kitchens to the upper rooms of town houses, and latterly the turning the hall of small houses into a general living-room. Various modern economical cooking arrangements—gas stoves and kitcheners—have led to a reduction of the size of the kitchen, which formerly was a very large room, and the scullery and outer offices have been reduced in size by means of more compact sanitary and culinary appliances. The smallness and compactness of modern sanitary fittings have led to corresponding reduction in the size of lavatories and bathrooms. Taking, for the sake of comparison, the town house of fifty years ago and a modern dwelling of the same character, it is remarkable to find a reduction of floor area of quite 30 per cent. Our modern town houses are small and compact compared to the old ones. We lose their roominess, but we have gained in the concentration of the service parts and offices; there is less waste in passages and useless corners; the architect is more definite in arranging his rooms for their special purposes, and in utilising his space. The paper read before the Society of Architects by Messrs. Barry Parker and Raymond Unwin, to which we referred lately, pointed to a few plans of

small houses and cottages arranged on the principle of considering the problem of house-design from the habits, family life, and personality of the client, of providing a suitable “setting” for the life of a particular family. In one example the hall was made a living-room, and carried up two stories with organ-gallery, with the stairs on one side, and lighted by a large mullioned window in the opposite wall; the landing and balcony formed a gallery round the open well-hole of hall of 12ft. square or thereabouts. The dining-room or “den” for meals was a small room on the other side of entrance-hall, and the kitchen and offices formed the north-west corner of the remaining area. The hall living-room was 21ft. 6in. by 25ft. 9in., including stairs, and had windows on the south, east, and north sides. We might refer to other instances of the desire to utilise room, and to turn each compartment to the best account. A good living-room is essential to every small house and cottage, and next to it in a cottage the functions of a kitchen should be added. A cottage living-room serves as the cooking-room, and the architect has to consider how he can arrange his fireplace to make it subserve the purpose of cooking by combining with it a dresser fitted with crockery, a washing-up bowl, plate-rack, and other cooking utensils. This has been done, and very satisfactorily, in recent cottages.

The process which we are considering cuts at the root of every imitative feature. Take as an example the angle window, and what is known as an “ingle” or recess. We constantly see this feature copied simply as a picturesque addition without any reason for so doing, or the motive which called it into use. The original reason for an angle window was to afford a view in some desired direction, or to bring the sun into the room; but we see it often reproduced for quite a motiveless purpose—merely to give a quaint effect to the room which it otherwise renders uninhabitable by cold, or over-hot by the sun. The ingie was made as a pleasant recess for sitting in near the fire, to avoid draught and to give a cosy seat. Now we see it so ludicrously small that it is not comfortable to sit in, or the modern tiled register stove is out of accord with the original conception, and the recess is a mere mockery. By referring each feature to the bar of utility or common sense, we may eliminate a number of features and arrangements. Has not our architectural progress been due to the process of defining more accurately the functions and uses of each class of building, and of making our plans of public buildings like workhouses, hospitals, asylums, baths, museums, and libraries, square with well-ascertained facts and statistics? The modern workhouse or hospital or asylum is a remarkable outcome of the specialising processes, that have been the result of Poor Law commissions and legislation, of Local Government Board inquiries and commissions, and of medical and psychological science. Facts and evidence have been obtained, formulated, and classified that have led to precise information as to the requirements of the pauper, the sick and infirm in body and mind; and these have been embodied in rules and regulations as to plan and construction. From uncertain, loose, and often mistaken notions—crude and false conclusions—buildings have been erected for the poor or the sick fundamentally wrong in principle—or little better than fever-traps or prisons. We have now much clearer and more precise ideas of what these public institutions should be. The modern hospital or asylum-ward is now a complete and fully-organised room for the treatment of the sick or insane, providing the several necessary adjuncts and accessories within the smallest area and in the most economical manner. Direct and easy administration is studied.

The principle of isolating acute cases from the ordinary inmates has produced many important improvements in planning. In the treatment of ordinary patients, convalescents and chronic patients, cheerful day-rooms and balconies are provided, and these principles have all tended to make hospital planning more specialised. The science of hygiene and sanitation has indicated the amount of cube space to every patient, and shown that in the acute cases a larger amount of air is essential. It also enforces the principle of isolation, efficient ventilation, &c., and these considerations have influenced plan and construction. We have spoken of domestic dwellings, and there is one other class of habitation that has been developed in our great cities—namely, the “flat,”—a problem that still to some degree awaits solution, if it is to become a *multum in parvo* of city life, or, as Mr. Banister Fletcher has suggested, a habitation where everything will be able to be “turned on,” besides water, cold and hot; ‘gas-heating, electric-lighting—even our breakfast, lunch, and dinner, “babbling machines,” and what not. The design of a small flat for a family, or even for a bachelor, calls for a very exact and precise knowledge. Fittings and apparatus, such as hot and cold water, electric-lighting, gas fires, and sanitary fixtures have all helped the architect to economise space, and to make his planning more precise and special.

Specialisation of construction is seen to a large extent in the construction and design of theatres, which have become during the last decade or two very complex structures. We all remember what the old-fashioned playhouses were like—their heavy supports and pillars carrying timber-framed tiers and roofs. Time has changed all this. We have now to design buildings with large and unimpeded auditoriums, with means of safe and direct ingress and egress, a system of fire-proof staircases, and galleries, and roofs. The cantilever system has allowed the tiers to overhang, and thus to do away with vertical supports which intercept the view of the stage.

It would be exceedingly interesting to trace the development of theatre construction, the chief features in which have been (1) an unobstructed view of the stage from all parts of the auditorium (2) the acoustical requirements, (3) good ventilation, (4) easy and safe entrances and exits, (5) fireproof construction, (6) modern stage machinery and appliances for spectacular representation. Under each of these heads we might show how the architect has been called upon to modify and alter previous plans and types; but such a task would lead us too far, and would require a volume to do it full justice. If we compare any of our older theatres with the latest structure—say the Apollo Theatre, in Shaftesbury-avenue—it will be easy to trace the modifications that have been made both in plan, construction, and detail. As it has been often observed, the theatre architect has so much to do as a financial agent that he has very little time to devote to the architecture of his particular branch, or as a designer in the true sense. His duties are necessarily of a more or less perfunctory kind—to plan a playhouse according to the latest models, and to conform to the regulations of the London County Council, under the Metropolis Management Act, or to the Lord Chamberlain's requirements. All structural ironwork he leaves to the firm of constructional engineers, as he leaves its upholstery and decoration to a firm of decorators, and its ventilation to a firm of ventilating experts. Except the valuable and costly work on theatre construction, by Mr. Edwin O. Sachs, we have no literature on the subject, and we are, therefore, very backward in the design of these buildings when we compare our playhouses to those of

other Continental countries, as the Vienna Court Theatre or the Paris Opera House. The construction of the auditorium has undergone considerable improvement. Its form on plan, the support of its tiers, the ceiling, and roof have received much attention. The employment of iron and steel for large houses instead of the ordinary materials is now regarded as the most economic, whether the construction is on the cantilever principle with overhanging tiers, or vertical support. In the Vienna Court Theatre the auditorium is a perfect framework of iron, though having the usual vertical supports, and it is noteworthy for this reason. Here the containing wall of the auditorium, the tiers, and the roof, ceiling, and floor are of metal. The design has been also materially influenced by the necessities of ventilation and heating and acoustical experience.

There are few classes of buildings which have developed more in this direction than farm buildings and dairy homesteads, where scientific agriculture and various dairy appliances have considerably economised labour, and have introduced modifications into the plan of the buildings and yards. Whether the architect will, or not, apply the law of differentiation due to functions to his buildings, the tendency of the day is towards greater economy and specialisation. He cannot afford to lose sight of this modern tendency to design with reference mainly to the fitness of things, to precision in plan, economy in space and the proper use of material.

If we consider for one moment the greater precision in methods of construction, to take for instance iron and steel work, floor construction, concrete and iron wall building, to say nothing of the numerous building appliances that have come into use of recent years, it will be seen that the architect of the twentieth century will have to account for a great deal more than that his building has been carried out in the style of the day, or according to the traditions of the past. Mr. William Emerson in his Presidential address to students at the Royal Institute of British Architects, did not say anything of this distinctive requirement of the architecture of the day, though he spoke of a proper proportion that should be observed between artistic sentiment and practical purpose. The architect is apt to sacrifice utility to art, if we can imagine such a severance. At one time there could be no art without utility, though we now talk of art as if it was the antithesis of utility—and so it is if we take art to be the traditional teaching of the schools. As the modern average architect practises, his art is often a contradiction to the useful—that is to say, he can seldom combine them satisfactorily—and he comes to regard architecture as so much expensive art added to the building. Comparing ancient philosophy with the Baconian or inductive philosophy of modern times, Mr. Emerson pointed to the fact that the latter was the beginning of the great tide of utilitarianism that has swept over the country; that nothing was beneath our attention that ministers to the physical or material advantage of mankind. Architecture has at last begun to feel this new spirit, though for a long time it was under a cloud. Since the Revival it has become more of a potent factor. That we should place art and utility on opposite sides, more or less in conflict, is not true, nor that art should be regarded as ideal or sentimental merely. We are forcibly reminded of those religionists who desire to draw a sharp line between the spiritual and the material, as if nothing corporeal can be good—a sort of asceticism that carries its own refutation, contradictory to both the teachings of reason and Revelation. So in architecture, we have no ground for separating art from the dictates of utility and common sense.

AGENT OR ARBITRATOR?

LAST week we reported two appeal cases bearing upon the question whether the architect is an arbitrator or an agent. We refer the reader to the full report we gave in our "Legal Intelligence" columns, and will now simply summarise the facts and the decision of the Master of the Rolls and Lord Justice Collins and Lord Justice Romer. The first case was that of "Chambers v. Goldthorpe," an appeal by the defendant against the judgment of the Divisional Court reversing the decision of the Holmfrith County-court judge. The plaintiff, an architect, sued the defendant, a building owner, for his fees, and the building owner counterclaimed for damages for negligence on the part of the architect in bringing out his final certificate. From the evidence, it appears the plaintiff architect had been employed to prepare plans for houses which defendant was to have built, and to superintend the work and measure it up when completed. A contract was entered into in the form approved by the National Association of Master Builders. After the houses were completed the architect measured up the work, and gave his final certificate; but the defendant counterclaimed for negligence, and for having measured up incorrectly certain of the work, whereby the certificate was for a larger amount than it ought to have been. The County-court judge gave judgment for the plaintiff for his fees, and for the defendant on the counterclaim. The Divisional Court held that the plaintiff was, under clause 20, placed in a judicial position between owner and contractor with reference to giving his certificate, and therefore was not liable for negligence. The defendant thereupon appealed. For the defendant it was argued that the plaintiff was not an arbitrator by the contract, and was merely the defendant's agent. It was urged that in the case of "Lloyd Brothers v. Milward" the Court of Appeal, upon a contract in the same form as the present, decided that the moment there was a dispute between building owner and contractor the architect could not give a certificate, and this decision showed that the architect was not in the position of an arbitrator. The architect could only give a certificate when there was no dispute, and this question had to be determined under clause 22 by the referee. The architect could only be an arbitrator when he had to determine a dispute. Reference was also made to "Clemence v. Clarke," &c. Secondly, it was contended that even if the architect was in the position of an arbitrator, as he was suing for his fees under an independent contract, the defendant was entitled to counterclaim for negligence under that contract, and the plaintiff could not rely upon his position as arbitrator under another contract. These were the chief arguments used for the defendant.

Taking this case first, the Master of the Rolls said: "The only question raised in the appeal was one which arose on the counterclaim, and was this—whether Chambers was placed in the position of an arbitrator, or whether he was merely in the position of a person acting as agent for the building owner. If he was an arbitrator, then the building owner could not sue him for negligence; he could only sue him for fraud or collusion, and there was no suggestion in this case of anything of this kind." Under many of the clauses of the contract, the architect was only to act as agent for the owner, and his duty was to look after the interests of the owner, he being liable for negligence; "but under clause 20, which stated that the certificate of the architect or an award of the referee was to be taken as conclusive evidence of the works having been duly completed, the question arose, Did the architect still remain merely the agent of the building owner, or was he not

an arbitrator? The architect undertook the duty of bringing out a final certificate. With respect to that, he owed a duty to the builder as well as the building owner, his duty being to hold the balance fairly between them." Referring to the contention that there could be no arbitration unless there was a dispute, his lordship thought "there might be an arbitration to settle what otherwise might be the matter of a dispute," and he referred to the cases of "Clemence v. Clarke," "Lloyd Brothers v. Milward," and "Stevenson v. Watson," and pointed out that the architect had not merely to make an arithmetical calculation, but to use professional knowledge and skill. He thought that the case of "Tharsis Sulphur Company v. Loftus" had even a stronger bearing on the case, and he came to the conclusion that Chambers, the architect, was in the position of an arbitrator. He also thought the counterclaim could not be maintained, and that the appeal must be dismissed. Lord Justice Collins concurred; and he said an architect who was bound to give a final certificate which should be binding on both parties could not be said to be free from duty to the other party, and when a person was bound to exercise judgment between others involving professional skill, he was an arbitrator, or in the position of a quasi-arbitrator.

In the case of "Restell v. Nye" a similar question arose. It was an appeal from the judgment of Mr. Justice Mathew in an action by a building owner against an architect to recover damages for negligence in connection with the building of a bungalow in Sussex. The defendant was to be paid by the plaintiff for "plans, specifications, and supervision of works"—5 per cent. upon the amount of expenditure, travelling and out-of-pocket expenses to be paid extra. A tender was submitted by a firm of builders at Brighton for the erection of the bungalow for £1,790, and was accepted. The plaintiff paid the contract price, together with cost of extras on the defendant's certificates. In this action the plaintiff alleged that the defendant had omitted to check the builder's account with due skill, and had passed as extras works included in the contract, and had certified for sums improperly passed. The contract was in substance the same as that in the last-cited case, though the arbitration clause was different. Judgment was given for the defendant on the ground that he was in the position of an arbitrator, and that no action would lie against him for negligence. The plaintiff appealed; but the Master of the Rolls and Lord Justice Collins thought that the claim could not be maintained, and on similar grounds, the question in both cases being whether the architect was in the position of quasi-arbitrator. The appeal was therefore dismissed.

The opinions thus expressed appear to be borne out by other decisions given in the cases we have mentioned; in fact the architect, in giving certificates, is performing a judicial function which protects him from any liability to the building owner. For certain purposes, especially giving final certificates, he has judicial functions; both parties agree to his decision, and are prepared to be bound by it as between themselves. The building owner, therefore, cannot turn round and charge the architect with anything he has done in this capacity as if he were only an agent. There is common sense in such a view of the case. In the case cited, "Pappa v. Rose," there was an ordinary contract. A broker was appointed in a contract to settle differences as to quality in some produce. The judge (Kelly) said: "I am clearly of opinion that he did not undertake to bring any degree of skill to the investigation." The principle is better affirmed in the judgment in the case we first gave, in which

the judge said the architect was put into the position of an arbitrator under a contract to act for him, "then in so far as he acted as agent *only* of the building owner, he was liable for negligence; in so far as he acted as arbitrator between the owner and the builder, he was not liable for negligence." We have here a clear statement of principle which it is well for the profession to bear in mind in their contracts.

Lord Justice Romer's dissension from this view is of interest only as it bears on similar cases. In his opinion, "If a person undertook for reward to value for another work about to be done for his principal by a third person, he did not, so far as his principal was concerned, become in the position of an arbitrator in regard to his valuation merely because he knew that his principal and the third person had by contract between them agreed that, in default of dispute previously arising, his valuation was to be taken as conclusive, and as determining the price to be paid by his principal for the work to be done. In such a case, in giving his valuation he would still be acting for his principal, and so long as he acted without fraud he would be under no liability to the third person. And, acting for his principal, if he was guilty of negligence causing damage, he would be liable to his principal." His Lordship admitted that such a view, which he thought the right one, could not be maintained by the architect in the case under review. We commend to the reader interested in this important question this decision as printed in our last issue in its entirety. The point which differentiated this from the other view was that the work of valuation was to be done for and paid for by the principal, and it followed that if in doing such work for which he was paid by his principal the architect was guilty of negligence from which damage ensued to his principal, he would be liable. He could only escape from liability by showing that by the terms of the contract between principal and contractor he was freed from liability, and he could only do this by showing he was placed in the position of an arbitrator with regard to his certificates. But this the architect could not succeed in showing, "merely by reason of the fact that his principal and the contractor had by the contract agreed that in the case of no prior dispute arising with reference thereto, his certificate should be treated as conclusive between them." His Lordship also referred to the arbitration clause (22), which provided for the settlement of disputes by an arbitrator who was not the architect, and in which the architect was clearly recognised as the agent of the building owner, as one opposed to the contractor. But we have said enough to show the point made in this divergent opinion. We believe the question is still a debatable one with lawyers in spite of the clear decisions that have been given. It is, however, satisfactory to be able to record the opinions of two eminent judicial authorities on the subject, which will go far to strengthen and confirm the previous findings of the Courts. If the architect is to be reduced to a mere agent in matters to which he is specially engaged, and to which he is supposed to bring skill and judgment, it will be impossible for him to exercise any authority in building beyond the most perfunctory duties, and it will, moreover, very seriously restrict his usefulness.

ASYLUM DESIGN.

THE design of asylums is, as Mr. G. T. Hine said in his useful paper on this subject read at the Institute, a distinct profession. It is the art of combining dissimilar structures into a whole, with the special knowledge necessary in providing for the requirements of the inmates, and

for the heating, water supply, lighting, and other technical and engineering necessities. The whole collection of buildings may be compared to a town in miniature, so varied and complex are its wants, and the architect who undertakes this class of practice must be one who has studied the eccentricities of the insane poor, their habits, and treatment, as well as the best types of buildings on the Continent, as well as those in this country. As a preliminary study, the requirements of the medical expert and the nurses and attendants at institutions of this kind are of the utmost importance; or we may go on repeating errors in plan and construction and detail, if we attempted to follow models, however good. If it is necessary to know the wants and habits of life, of a client before designing a house, it is much more requisite that the designer of an asylum should make himself familiar with the daily wants of incurable patients, and the treatment they ought to receive. As to the general principles of asylum design, they are now pretty well understood, and are mainly based on two systems known as the corridor and pavilion systems, principles of planning that are also applied to hospitals and other allied buildings. First we have the old quadrilateral plan of asylum, which consisted of single rooms connected by a corridor round a quadrangle, or the interesting Wakefield Asylum, one of the earliest models. Then there came a more classified arrangement, in which wards for the sick and infirm were provided on each side; cells became reduced in number, and the idea of association came into existence, by which some of the patients were allowed to sleep together in wards—these modifications were to be seen in corridor plans. Afterwards we get plans based on pavilion and corridor-pavilion systems, as in the County Asylum of Whittingham, described by Burdett as one of the finest specimens of asylum architecture in England. One of the first instances of the pavilion plan is shown in the Gloucestershire County Asylum, the blocks arranged *en échelon*, and this principle of planning has been developed of late years. Mr. Hine says: "It may be said to have originated the oblique or broad-arrow form of corridor, now so commonly adopted in asylum designs. The Surrey second county asylum at Cane Hill, one of Mr. Howell's chief works, and accommodating 2,000 patients, is on the pavilion type, the blocks radiating from a main corridor of horseshoe form." The provision for epileptics made by the Lunacy Commissioners about 1874 is embodied in a plan of a ward designed by Mr. Howell, which has been, Mr. Hine says, "adopted with trifling variations in nearly every asylum designed within the last twenty years." These types of plan have been followed more or less. Mr. Hine's fine example, the Claybury Asylum, is described as "a modification of the *échelon* type, the ward being approached from obtusely oblique corridors, the pavilion system being almost a necessity from the conditions issued." Here the problem was how to accommodate a large number of patients within reasonable distance of the administrative centre without prejudice to the aspect of the wards or day-rooms. This has been very ingeniously solved by the directions of the raking corridors, which diverge from the front corridor. The fall of the ground on all sides necessitated some of the wards being lower than the central buildings.

Important as the principle of distributing the pavilions is for the purpose of giving the right aspect, sunshine, and shelter, for bringing all the patients within the influence of the administrative centre, the details of asylum planning ought not to be neglected. The housing together of certain acute cases, such as the curable and incurable referred to by the author, is still a question. The

Scotch Commissioners think they should be provided for in the acute hospital; but English medical experts believe in a hospital quite distinct and apart from the asylum for new and undiagnosed cases, and think this separation necessary in the cure of some kinds of lunacy. The isolation or division of the acute wards is necessary to avoid the evil of excitement. The provision of an acute hospital for the treatment of curable cases is certainly of the first importance in large establishments. The villa or cottage system for the chronic cases, as carried out in Germany and America, is another development of the greatest interest. These villas are designed like boarding-schools, with dayrooms and classrooms on the ground floor, with associated dormitories above; the patients are free to come and go as they please (the doors and windows are open), or wander in the grounds, but always under the attendant's eye; there are no high walls, only light fences grown over with creepers. Such is the description given of those abroad. Mr. Hine's asylum at Bexley exhibits this system. Three villas holding 35 patients each, and a detached hospital for 50 phthisical or other cases of isolation, are arranged, the wards communicate, and the officer can pass from one end to the other without having to return to main corridor. And this experiment has proved so satisfactory that the Asylums Committee have adopted the same plans with certain modifications for an asylum on the same system at Horton. This development, we think, is likely to find favour among many, but the corridor-pavilion plan has its merits. In the cottage system the continuous principle or corridor is adopted combined with villas. The Bexley Heath Asylum has an entrance block for officers, electrical staff, &c., in a centre block south of the last are the stores, kitchens, dispensary, and other administration offices; and on each side are buildings for nurses and attendants, and in the rear are blocks of 120 working patients on each side. The patients' wards are on each side of the administrative block—the females on the west, and males on the east. Each side of main corridor forms a quadrant, the blocks being stepped back southwards, and are arranged in a continuous series, so that the officers can go their rounds without having to retrace their steps. This asylum accommodates 2,000 patients. Details of plan such as those of each department, the general administrative block and store, the ward blocks or pavilions, each separately considered in its various appointments, sanitary annexes, staircases, nurses' room, and adjuncts have all to be carefully studied in the plan. Those of our readers who are interested in the design of county asylums will do well to read Mr. Hine's paper and his remarks on an ideal asylum, of which the planning of the acute hospital is the most important part. Here, as we are told, every patient, unless hopelessly incurable—in which case he goes into the main asylum—has to be admitted to be attended to and treated, and here the greatest expert skill is required. If the patient goes back to the asylum for the remainder of his days, he costs his country £30 a year or more. The design of internal cupboards and latches, heating and ventilation (the plenum system of heating is recommended), and laundry appliances, must not be neglected if the building is to aid the nurses and medical staff in their daily duties, and in removing every impediment to easy administration. Mr. Hine thinks a well-built asylum fitted with all modern appliances cannot be erected for much less than £300 a bed. A very ordinary figure for building only is from £150 to £170 per patient. The cost of recent asylums have, however, shown an increase, due to various causes; the average has been nearly the figure given above. The author does not dwell on the architectural question of asylum planning;

nor can we wonder at this when so much has to be done by regulation, so much on the lines laid down by the Local Government Board, and on precedents. The principle or system of planning largely affects the question of grouping and design. If we recur to the cottage system, we shall lose a sense of the unity and coherence of a large institution which is to be found in the corridor and pavilion plan; besides, there are the difficulties of administration and supervision, which a number of scattered villas would increase; but there are ways by which the architect can make even this system agreeable if he really takes the trouble. We think that quiet chronic patients would have their lives rendered happier if they had buildings more like their own homes; in fact, the whole tendency of treating disease, whether mental or physical, appears to be to individualise, to consider the individual unit, and to bring into being the principle of segregation. The architect possesses few books on the subject;—the large and handsome volume by Burdett, and a few other works not generally accessible, are the only sources of information, except the papers and illustrations published in the *BUILDING NEWS* and works by medico-psychological experts.

THE ARCHITECTURAL ASSOCIATION.

THE fortnightly meeting of the Architectural Association was held on Friday evening, the President, Mr. W. H. Seth-Smith, F.R.I.B.A., in the chair. Messrs. D. Hill and A. Gilbert Scott were elected as members. The President announced that a special meeting would be held that day week (to-night, Friday) at 7.30 p.m., to consider certain proposals for establishing day classes of instruction in connection with the Association (see p. 328).

THE PARIS EXHIBITION OF 1900.

A closely detailed paper on this subject, illustrated by over 140 lantern slides, was read by Mr. E. W. M. Wonnacott, A.R.I.B.A., the winner of the travelling studentship available at the Exhibition, offered by Mr. Arthur Cates a year ago. The lecturer described the preliminary and final competitions for plans for the Exhibition, and showed that a final ballot, with M. Alfred Picard, inspector-general of roads and bridges, as "reporter" (assessor), brought out the name of M. Girault as architect for the Petit Palais, while for the Grand Palais were selected (1) M. Louvet, (2) MM. Deglane and Binet, and (3) M. Thomas. Eventually most of these were associated together in the design and construction of the Grand Palais (except M. Binet, who received as consolation the commission to erect a monumental gateway at the principal entrance to the Exhibition). The architects who were placed second in the competition for the Petit Palais were commissioned to execute the architectural decorations of the new bridge, forming the connecting link between the Champs Elysées and the Invalides. MM. Cassien Bernard and Cousin, the architects referred to, were to work hand-in-hand with the engineers already appointed, MM. Resal and Alby. The architectural department, which worked under the direction of M. Picard, was housed in a fine red-brick pavilion, with offices on the Avenue la Bourdonnais. The 1900 Exhibition resulted in a deficiency of over two million francs; but this applies to the official work only. There are in addition the unofficial shows also to consider; 670 projects were submitted in the preliminary competition, 60 of them retained for the final selection, all of which had to pay extortionate rents for their groundspace, and were, moreover, over-capitalised, many of them having to close their doors early in the summer. The total amount of capital raised for these unofficial shows was 46½ million francs, nearly £2,000,000. Much money was thus sunk by the concessionaires, and nothing was reaped from it.

WORKS AND CONSTRUCTION.

The wreckers (those wolves of architects, as they have been called) and the navvies were looked after by a Committee of Hygiene. All the immense masses of earth that were moved, whether in foundations, road or tramway cuttings,

were profusely sprinkled every day, when work ceased, with pulverised sulphate of iron 100 parts to quicklime 200 parts to every square metre. This precaution to us may seem absurd, but Paris is a very insanitary city, and still abounds everywhere with hidden cesspools and middens.

DEMOLITIONS.

The old Palais de l'Industrie was removed for the sum of 200,000fr., only the colossal group that crowned the structure, by Elias Robert, being preserved. The dome, the Dome Centrale on the Champ de Mars site, cost 20,000fr. to pull down; and the Pavilion of the town of Paris—from the last Exhibition—20,000fr. Besides these, there were rased the Palaces of the Fine and Liberal Arts. It is estimated that it would cost, to remove the Galerie des Machines, which still stands, 1,000,000fr. if it had been decided on.

WORKYARDS.

The contractors' yards for heavy materials were laid out in a most methodical manner, amply provided with tramways and railways, cranes, hoists, and everything desirable to facilitate despatch; and despatch was the order of the day. The daily labour roll amounted to over 5,000 hands, in spite of the fact that everything that could be fitted together before arrival on the site was so done. There were twenty-three of these workyards, each under an architect—in some cases under two architects working together.

STONE.

That most largely used was the calcaire grossier (a white freestone largely found in the Paris basin), from the quarries of Château Landon, near Nemours (Seine et Marne), as was used for the Arc de Triomphe; also the stone from the Aisne and Oise Valleys, as the new Louvre; those of Charentenay and Courson (Yonne), as we see in the Hôtel de Ville. The ashlar work of the Petit Palais was a hard freestone from Contarnoux (Yonne) up to the first band, and above that a freestone from Méry. In the Grand Palais, where there were about 40,000 French tons (17,000 cubic metres) used, the lower part was from Villebois, and was the only example one could trace of a quarry-worked stone. All the rest was cut and worked on the site, the freestone being from Euville, Lerouville (Meuse), and Larrys (Bourgogne) for the socle, and from Villers, Adam, and Vic sur Aisne. We also see pink mottled limestone from the Côte d'Or, or Burgundy, employed in decoration and pilasters, similar in appearance to our Devon limestones. Also grey granites from Calvados, white and golden-yellow freestone from Poitevin sources, and the valley of the Oise.

STUCCO.

But the material most profusely used throughout the Exhibition for the temporary buildings was the stucco or "staff" applied over the light wood or iron skeleton of the structures on fireproof lathing or wirework. As most of the buildings were temporary, they were executed almost wholly in this way. This "stuc" was very largely used in the 17th and 18th centuries, and is now the universal material employed by speculating builders in Paris, for the vestibules, staircases, entrées, &c., and an old example can be seen in the Presidency of the Chamber of Deputies, where the stucco was coloured; the work was by Jules de Joly, then architect of the Palais Bourbon.

CIMENT ARMÉE.

Then there was the ciment armée, or concrete with steel cores, used in large masses, profusely used in nearly all the buildings, whether permanent or temporary, especially for staircases and landings of wide span.

STEEL.

But looking back over the century just passed, the material that has come most to the front is steel. In 1900 steel had become almost the universal material for the framing of structures, even if temporary. Specially to be noticed is that magnificent bridge, the Pont Alexandre III., the metal work of which cost over two and three-quarter million francs. Over 50,000 tons of steel were used in the two Fine Art Palaces alone. An example from the statistics will show the great economy effected as the result of previous experience, gained in the former Exhibition. In 1878 it cost nearly 5fr. per cubic metre to erect the steelwork coverings; in 1899 this was reduced to 2.77fr., while in the recent Exhibition the figure barely reached 2fr. per metre cube.

FOUNDATION IN BAD GROUND.

A singular process was employed in the marshy part of the Exhibition site, where the ground was soft and spongy—that was, mechanical compression, in which a steam pile-driver was first used to perforate the ground to a hard bottom, then to enlarge the bottom of the hole thus formed, and finally beat down and consolidate the concrete thrown in to form the foundation, a large concrete pile, thus standing on a kind of mushroomed foot on the hard bottom. This avoided the necessity of removing large masses of poor soil, and gave at the same time a stable substructure for the subsequent erections.

ESTIMATES.

A word on the system of estimates prepared by the architects for the builders. Instead of pricing a bill of quantities, as with us, and the job going to the lowest tenderer, the architect, or his surveyor, gives in his estimate at a given figure. Invitations are then sent out to the contractors, and the game then is to find out who will give the greatest rebate below the already quoted price.

DESIGN.

As regards the buildings collectively, one must regard this Exhibition as a spectacular achievement, an architectural fairyland, and one can overlook the faults of too exuberant, or fantastic detail, bearing in mind that these productions were for a festal occasion. Great was the variety of form and mass, extraordinary originality and vitality were displayed in the detail and decorations, while most vigorous was their execution. Picturesqueness was supplied by the row of foreign pavilions on the river bank, the Château d'Eau and the gardens of the Trocadero, and other parts of the Exhibition, while dignity was worshipped in the symmetry displayed in the vistas of the Champ de Mars and the Esplanade des Invalides.

PLAN, ETC.

The Exhibition was laid out on four main sites, two on each bank of the river, with connecting strips bordering immediately on the river itself; but these four sites fall into two groups, each of which consists of a piece of ground on one side of the river connected with another similar plot on the other by means of a bridge, which forms the axis of each group. Thus we have the Champ de Mars—the largest of these four plots—connected with its opposite neighbour, the Trocadero gardens, by the Pont d'Iéna. Similarly we have the Esplanade des Invalides joined to the Champs Elysées portion by the magnificent Pont Alexandre III. Then these two groups are connected themselves by narrow inclosures or strips of ground on the banks of the Seine. But the axes of these two groups are inclined to one another, almost meeting on the south side, and diverging to the north. The area of the site covered was much more than in previous exhibitions, and amounted to 112 hectares, including the overflow site in the forest of Vincennes.

DESCRIPTION OF THE PLAN.—CHAMPS ELYSÉES PORTION.

At the main entrance, overlooking the Place de la Concorde, we find the Porte Monumentale, the principal entrance (of forty-five in all) giving access to the grounds. This was designed by M. Binet. We pass along a broad walk, parallel to the river, leading to the new Pont Alexandre III., and we then find on our right the two Palaces of the Fine Arts, the one nearest to us as we emerge on to the avenue being known as the Petit Palais, and facing it on the other side of the avenue the Grand Palais, the rear of which abuts on to the Avenue d'Antin. These features, the two palaces and the bridge, are intended to be permanent embellishments of the town of Paris. We pass along the continuation of the broad walk above referred to, cross the Avenue d'Antin and the Pont des Invalides by a picturesque footbridge, and enter a narrow inclosure between the Cours de la Reine and the river, known as the Rue de Paris, containing chiefly the large pavilion of the town of Paris, by M. Gravigny; the Palace of Horticulture, with its aquarium in the centre; and the Palace of Congress and Social Economy. Each of these structures borders on the river, and on the other side of the Rue de Paris is a miscellaneous crowd of small shows, quite Parisian. Then by another footbridge by the Pont de l'Alma into the picturesque Old Paris, also bordering on the river, past several bakery exhibits, and emerge on the large garden of the Trocadero, where are situated the

French and foreign colonial exhibits. The Palace of the Trocadéro, remaining from the 1878 exhibition, was not itself a part of the 1900 exhibition, although included in the site (a portion of the basement and cellars excepted), and at the northern extremity at the rear of the palace a large panorama of Madagascar. The Champ de Mars is connected with the Esplanade des Invalides by the Rue des Nations, where we find the most picturesque spectacle of the Exhibition, the row of foreign pavilions abutting on the river, destined to be wiped out of existence by this evening, although a few of them are to be re-erected in various parts of the world. On the same bank of the river, before entering the Street of Nations, we pass the Palaces of Forestry, Navigation, and that of the Land and Sea Forces. Then coming to the Esplanade des Invalides, we find, as on the Champ de Mars, two parallel ranges of buildings devoted entirely to the decorative and industrial arts, the avenue between these two rows being a continuation of the Avenue Nicholas II. and the Pont Alexandre III, and terminating southwards in the fine vista of the Hôpital des Invalides. It is in this portion of the exhibition that we find the buildings designed on a high artistic level; the façades are very fine, the masses happily grouped, and the details, if somewhat exuberant, are extremely suitable.

A FORT MONUMENTALE, DESIGNED BY M. BINET.

This is a difficult structure to describe without plan and drawings, but the secret is easily seen and its construction grasped in a lantern-slide, together with the drawings on the walls, the construction being of three large arches on a triangular plan, supporting a large gilded dome. It was well set back from the roadway, and was visible from all sides. An immense archway forms the main entrance, 65ft. wide, flanked by decorative minarets, 160ft. high. Behind were two arches, the whole covering the numerous turnstiles giving access to the grounds, while at the rear was a large wrought-iron gateway, the "Porte des Echevins," reserved for official recessions, these all supporting the immense decorated dome. The whole was covered with rich colour, frescoes, and glass mosaics, interspersed with innumerable tinted electric lamps, quite indescribable. Its effect to the mind of an architect can only be described as "Arabesque." The crowning feature of this composition was the quaint figure of Modern Paris in the attitude of welcoming the nations, represented by a lady in rich evening dress and cloak. This figure was the work of M. Moreau-Vauthier, and was the cause of a lengthy and rather hot discussion. Then the Ship of State (also the arms of the City of Paris—a motif in high relief—ornamented the spandrel portion of the main arch, and at the base of the flanking masses was the original and powerful conception of M. Guillois, a fine bold frieze in bas-relief, the "frise du travail," representing the contribution of labour to the Exhibition. An ingenious arrangement of the turnstiles must not be overlooked, calculated to accommodate the passage of over 60,000 persons per hour. An exact model was first made, and from this M. Binet produced his final studies. The whole structure stands on a foundation of piles; the skeleton was a very light construction of iron, overlaid with a framework of wood, and covered with plastic or "staff," then enamelled and painted in colour. Its estimated cost was 20,000. Recently this was advertised for sale, and materials. There were 200 tons of iron, 100,000 metres of wood, 100,000 of building stone, 100,000 of brick, 100,000 of other materials, and 7,000,000 of glass and lamp globes. The price it fetched was about 100,000 fr.

THE GRAND PALAIS DES BEAUX-ARTS.

This building was, during the Exhibition, the one of the French and foreign displays of the arts, painting, sculpture, and architecture; but it will remain as the permanent home of the French annual Salon. The building is of immense size, covering nearly ten acres, its plan resembles the letter H. The commission for it was given to three architects, who worked together most cordially in its production, and so successfully treated the various portions as to make them appear one great building externally. The front portion, that facing on the Avenue Nicholas II., was intrusted to M. Deglane, who was responsible for the immense façade, and the rear hall forming the sculpture hall. M. Louvet executed the central link portion, with the grand staircase, "l'Escalier d'Honneur," for ceremonial

use, leading to the concert rooms and picture galleries on the first floor. The rear portion was allotted to M. Albert Thomas, comprising the front facing the Avenue d'Antin, a large central hall, covered by an elliptic dome, and the wings. The cost of this was estimated at 25,500,000fr. The foundations, over 550,000fr., were put in with great difficulty, as a portion of the site was a mere marsh, with beds of peat and clay; part of the palace is therefore constructed on oak piles, and part on concrete bedded on a sandy clay. The stonework, 40,000 French tons, in a brilliant white freestone, the calcaire grossier, was all cut on the site by a diamond saw, fed by a 10-ton traveller, running on rails. Stone was exclusively used on the external fronts, but the inner walls were of rubble and brick, faced with stone. Ciment armé—i.e., cement concrete strengthened with steel wire of large gauge—has been largely adopted for the staircases and galleries. Then for the roof were used about 6,000 tons of steel, executed by Daydé and Pillé, of Creil. The strains were so carefully calculated that the resultants pass through the points of support, thus relieving entirely the masonry construction forming the inclosing screen-walls of the palace. M. Deglane was obliged to alter and modify his first conception in order that the Petit Palais, facing it, should not be overpowered by its more important neighbour. Instead of one large entrance porch, as originally intended, of great height, we find now three wide bays with doorways and a colonnade; the basement was considerably lowered, and the roof put almost out of sight. But the glory of the façade was retained in the glass mosaic frieze, about 250ft. long, designed by M. Fournier. The immense nave or sculpture court, 600ft. by 165ft., is under one great glass roof, the central part being dome-shaped, of about 230ft. diameter, carried on curved principals formed as box-girders, grouped in pairs, and decoratively treated with wrought-iron scrolls and ornaments. The intermediate part, by M. Louvet, or bridge of the H, comprises a return of the nave and the Staircase of Honour, with two short façades on the north and south sides respectively, each 210ft. long. M. Louvet had a knotty problem to solve when asked to provide for exhibitions of all sorts. At the head of the wrought-iron staircase, sumptuously gilded, is the great concert-room, for 1,500 persons. M. Albert Thomas, who did the rear portion of the great palace, had a fine opportunity, and has produced a very fascinating work. It comprises a rectangle of 510ft. by 145ft. wide, covering nearly 7,000 square yards, with an important façade on the Avenue d'Antin, set well back from the frontage, and raised about 14ft. 9in. above the roadway, giving a well-lighted basement to be utilised as stables during the horse competitions, with room for 600 horses, and accommodating also all the auxiliary services of this vast edifice, such as police, fire, and ambulance posts, telephone service, office staff, tobacco bureau, &c. A large hall, nearly circular, forms the central feature on the ground floor, being about 92ft. diameter and 10ft. high, top-lighted, and of great beauty and originality of design; a large gallery, 17ft. 6in. wide, running all round the outside, on two floors, and two triangular halls in the two wings, 63ft. by 144ft., two stories high, containing the means of access to the upper floor, and giving an uninterrupted vista from end to end of the building. The front of the Avenue is treated with coupled columns, partly detached from the wall. This portion is intended to be used for special exhibitions and functions, independently of the remainder of the palace. A fine frieze in bas-relief by M. Joseph Bompard, about 100 ft. long, represents the history of art, and is placed behind the colonnade above mentioned. It has been executed at Sèvres, in opaque pottery or ceramic, and gave a most remarkable effect, being obviously inspired by the Assyrian friezes of Danes.

THE PETIT PALAIS, BY M. DEGLANE.

This very fine building, indeed, the gem of the Exhibition, covers a surface of 7,000 square metres, or nearly $\frac{1}{2}$ acre. It is intended, like the Grand Palais, to be a permanent home for French art, a State Museum in fact, and will become the property of the City of Paris, for which the Municipality gave twenty million francs. As part of the Exhibition it contained the retrospective exhibit of French art, such as ivory, bronze, and ceramic work, furniture, jewelry, glass, &c., from the earliest times to the most recent. In construction it should

be noted that in this building steel was used to only a limited extent. The walls were all of rubble faced with ashlar, the vaults and floors of brickwork set in gypsum, and the roofs, with a little steel, covered all. These vaults in the Petit Palais were of brick set in plaster of Paris, which is the universal cement-material, without any centring, only a small curved template being used as a guide; the men worked very rapidly (as plaster sets quickly) in laying the rings or courses of the domes or vaults till the shell was complete. This formed a centre for the next, and even a third, if required, shell on top of this. The cost of this style of work, very light and very strong, was 40 francs per square metre; it was very quickly built, and exerted practically no thrust on the walls. The internal stucco decoration was then laid over the surface of the vault as required. Several developments of the ciment-armé were worked out by M. Girault. One corner of the palace was built entirely in cement, with a cross-cross of iron rails bedded in the concrete, whereas the adjoining walls were on piles in the ordinary way. Then his floors were largely in ciment-armé. In plan this palace was D-shaped, the interior being a garden surrounded by a semi-circular colonnade, round which was grouped a double range of galleries in a semi-hexagonal form for the exhibits; the straight part of the D formed the façade, the main entrance being in the centre, leading into a fine domed hall, off which were two lateral galleries at a slightly higher level, and at the ends or corners two saloons, from which one enters upon the galleries at rear. Several modifications were made in the design in M. Girault's final drawings, and even during the progress of the works, in order to harmonise with the great palace opposite. In front, the chief feature is a semicircular porch, approached by a fine expansive flight of steps, and at the head of this a "gate of honour," with beautifully-designed iron gates, gilded. The order employed in the façade is an Ionic one, with lofty bays in the intercolumniations. Sculpture is used in abundance. Internally, the decoration is as surprising as the scheme of the exterior, the vaults and domes being covered with relief ornament and sculpture, very fine in treatment, and used unsparingly. The columns and pilasters are of a cheerful pink tone. The architect of the Petit Palais was M. Girault.

PONT ALEXANDRE III.

On the Pont Alexandre III., two leading Parisian architects were employed to co-operate with the engineers, the allied artists being MM. Resal and Alby, the engineers, and MM. Cassien-Bernard and Cousin, their architectural collaborators. The bridge is constructed entirely of steel, 350ft. span, in one low sweep, the rise being nearly 23ft., composed of fifteen girders representing the width of the bridge, which is of the noble dimension of 40 metres), each girder being in two pieces, hinged, or articulated at each abutment, and in the centre to allow of the necessary spring. The roadway had to be kept level, or nearly so, with the approaches, in order that the vista of the Invalides should not be interfered with when seen from the opposite bank. The cost of the metalwork used in this bridge was about 2½ million francs, and the accepted tender for the foundations amounted to over 1½ million more, 12 per cent. below the engineers' price. The contractors were MM. Lestellier and Boutrignien, who had already done the foundations of the Pont Mirabeau, under the same engineers. The chief decorative features are the pylons, the statues, the lamp standards, the parapets, and the cartouches. The pylons or monumental piers, 17 metres high, are two at each end of the bridge, with as many allegorical figures by MM. Lenoir, Michel, Coutan, and Marqueste. On each Pylon is a gilt group of Fame and Pegasus, each by a different artist, and designed with great freedom and vigour. The strain on the abutments is about fifty kilogrammes per square centimetre. It took over 7,000 tons of steel, all from the Creusot works, laid on a latticed-framed temporary bridge, first erected to facilitate the placing the girders in position, and then removed. The abutments are in granite blocks from the Vosges. The setting out was so carefully done that on joining up in the centre the discrepancy amounted to seven-tenths of a millimetre on a total length of over 350ft. The foundations had to be carried down to a depth of 54ft. on the right bank, and nearly 60ft. on the other. Caissons were sunk in the proper positions,

and afterwards filled with concrete and granite. Compressed air was employed in the subterranean excavations. Very massive castings bedded in the abutments receive the ends of the fifteen steel girders, a pin, circular in section, separating the ends of the girders from the cup in the casting to allow of the necessary movement. Each outer girder weighed 167 tons, and the others 144 tons. The other bridges of the exhibition are all merely temporary, and comparatively unimportant. The Pont d'Iéna, one of the existing bridges of Paris, was absorbed in the exhibition site, and effectively disguised by being widened. All this extension work is to be removed, and the bridge restored to its former state. The numerous and picturesque footbridges of timber over streets and ways in the Exhibition itself were artistically treated in rustic woodwork, with domes in trellis-work over.

THE PALACE OF FOREIGNERS.

The first of the temporary buildings along this bank was designed by M. Charles Gautier. It was constructed wholly of iron and glass, with lateral galleries separated by a central nave, and a rotunda at each end. The framework was of extremely light iron angle-bars and trellis-work in wood, and groupings were freely used to conceal the ironwork. The dimensions of this palace were 270ft. long, 100ft. wide, and 67ft. high. It is proposed to hand over this building to the City, to be re-erected, in all probability, at Passy, or to be retained in its present position, if the municipal authorities so choose.

PAVILION OF THE TOWN OF PARIS.

Then we arrive at the dignified pavilion, which the municipality had commissioned the architect, M. Gragny, to erect—a large structure, covering more than 5,000 square metres, constructed entirely of timber, for easy removal. It was planned with a large central court, surrounded with galleries on the first floor, with central staircases for access to the galleries as the principal feature at each end internally.

PALACE OF SOCIAL ECONOMY, ETC.

Passing along, we came to the Palace of Social Economy, by M. Mewes. It is about 330ft. long and 100ft. wide, and its execution was carried out in a peculiar manner, eight of the best known co-operative industrial associations combining to do the work. It is entirely of timber covered with "staff," and no steel was used because there happened to be no trade-union representing the metal trades. It contained, besides galleries for exhibits, ample and lofty rooms for meetings and congresses of all sorts. Passing down stream, we come to

OLD PARIS,

on the same bank, lending itself to the picturesque. It extended over 750ft. along the right bank, built almost entirely on piles, and in the hands of M. Robida has given us a delightful conception of a Mediaeval town. M. Robida was assisted by seven other architects. For the Champ de Mars buildings, the four on the flanks and the one at the end, the bill for the iron and steel construction, which was of the most economical materials, came to a total of 6,000,000fr. The terraces, on which stood the Palaces of the Fine and Liberal Arts, by M. Formige, from the time of the 1889 Exhibition, have been removed, and the inclined plane formed leading up to the Palace of Water and Fire. On our left is the Mining and Metallurgy Palace, by M. Varceiller; next it that of the Textiles, entrusted to M. Blavette; these are balanced by the Civil Engineering and Education Palaces, the former by M. Hermant, and the latter by M. Sertais. At the end is the Palace of Mechanical Science, with the grand set piece the Château d'Eau, by M. Paulin, and behind it is the Palace of Electricity, which takes the place of the centre dome of the 1889 Exhibition. The area of the Champ de Mars thus covered is more than sixty acres.

THE PALACE OF MINES AND METALLURGY,

by M. Varceiller, architect, is a well-designed building, facing on the central avenue for an extent of 315ft., and on the return front, parallel to the river, of 250ft. At the angle where the two fronts join is the entrance, surmounted by a lofty dome, flanked by pavilions, containing each a circular staircase for access to the broad open gallery or loggia on the first floor. The steel framework is covered with wood, over which is the usual wire lathing and plaster painted in a happy scheme of polychrome decoration.

THE PALACE OF TEXTILES

was still larger than the last, being 923ft. long by 424ft. wide. It was undertaken by M. Blavotte. It had similar conditions imposed on it as the others of this group—i.e., a broad open arcade on the avenue front, the first story being about 23ft. from the ground. The large entrance-porch was very dignified, and treated, as were nearly all the buildings on the Champ de Mars, with a polychrome scheme in very good taste. At the end of the Champ de Mars we have the two palaces, or rather one palace in two halves, devoted to mechanical science and to chemical industries, with the masterpiece of M. Paulin in between, the Château d'Eau, closing the vista at the southern end. These two palaces are connected at the rear of the grand cascade by a broad corridor at the first-floor level. In plan, each half-palace consists of three wide halls separated by narrow galleries. Each building is almost square, being about 456ft. by 453ft., with an external arcade. The Château d'Eau, M. Paulin's *chef-d'œuvre*, was placed in front of the Palais de l'Electricité. It was built on rubble piers, at the head of the immense slope where the fountains and basins were laid out. Its principal feature was a vast architectural niche, 24 metres in diameter, from the head of which issued the water, the fall and jets being arranged in a very artistic and original manner.

THE PALACE OF ELECTRICITY,

by M. Henard, was at the rear of, and masked by, the Château d'Eau; therefore the architect raised the roof of the gallery, and threw all his inventive genius into the skyline he thus formed—a broad open cresting of metal and glass, like lacework by day, and suggestive of a fairy embroidery by night, with its changing lights. The palace measures about 230ft. high, and its front extends the whole width of the Champ de Mars avenue, 150 metres long. Its construction was entirely of iron and glass. M. Henard had also another delightful work in hand—the Hall of Illusions. The astounding effects of changing colour and infinite space that one can scarcely describe were produced by large mirrors and coloured lights.

THE PALACE OF CIVIL ENGINEERING,

by M. Hermant, is the counterpart, as regards size and disposition, of the Palace of Textiles, which it faces. Instead of the ordinary iron lathing or wire netting we usually find as the foundation of the decorative plaster work the contractors here used flat sheets of metal punched or stamped out into tongues, which projecting formed the key for the plaster.

THE PALACE OF EDUCATION,

by M. Sortais, architect, covering over 27,000 square metres, is similar in its general lines to its fellow opposite, the Palace of Mines, first described. Its angle pavilion is very charming, with a delightful campanile of about 150ft. high. The steel construction of this and the building of Civil Engineering was exceedingly economical, being built up entirely of small sections, which meant easy handling, quickness and facility of construction, and cheapness of execution.

THE SALLE DES FÊTES,

by M. Raulin, was one of the attractions of the Exhibition, and is destined to remain for some time to come, although its fate is not yet settled. It must be remembered that the old Machinery Gallery of the 1889 exhibition remained standing, and was absorbed into the 1900 one, but the centre portion of this was screened off, forming a square in plan, and will accommodate 20,000 to 25,000 people. Its dimensions are 535ft. by 460ft. on plan. The dome is 300ft. diameter, and is 147ft. from the floor. Two artistic façades form the screens which divide the hall from the two ends of the Machinery Gallery. The four great panels were by M. François Flameng, M. Rochegrosse, M. Maignan, and M. Cormon. Before leaving the Champ de Mars there are a few little buildings at which we might glance. The Luminous Palace, the creation of M. Penswin, carried out by M. Latapy, on a special site near the Eiffel Tower. Glass formed almost the entire material of the structure, and at night the whole was illuminated, walls, columns, and all, by electric lights skilfully concealed, and arranged to change the colours at will. The next is the Women's Palace, for the exhibits connected with the fair sex, and is a type of the temporary structures. Next we have the

Pavilion of Ecuador, at the foot of the Eiffel Tower, which is rather more flamboyant than the last. Lastly the Café de la Belle Meunière. Turning our attention to the buildings on the left bank of the river, beginning at the west end and proceeding up stream, we see first the Globe Celeste, the most unfortunate of the private speculations of the exhibitors. Then we come to the Palace of Forests, over 600ft. long on its river front, constructed entirely of wood, and decorated with the various forestry exhibits and ornamental timbers. It was designed by MM. Tronchet and Rey, who were also entrusted with the neighbouring Palace of Navigation. This was also on the river front, beyond the Pont d'Iéna, with a façade of 480ft. long. This also was a timber structure, built in a fashion similar to our steel construction, and covered with "staff." After this is the Creusot Pavilion, the exhibit of the great firm of Schneider, who carried out the steel work of the Pont Alexandre III., a hideous huge-domed pavilion, painted in red oxide. The diameter of the dome was 140ft., and in height it was 165ft. internally; this was covered with a lantern or belfry. The entire weight of the lantern and dome was some 400 tons. Then we pass on to the Army and Navy Palace, an immense building, bordering on the river, for more than 340ft. in length, designed in a style more or less mediaeval. It was built of wooden framing, trussed up with iron tie rods and bolts, and the plaster covering was attached in slabs nailed to the timbers, then an external finishing coat, and the decorations were laid on this. Next came the Palace of Hygiene and the Pavilion of Mexico. Passing on and crossing the end of the Pont de l'Alma, by another picturesque footbridge, we come to the remainder of the Exhibition buildings on the Esplanade des Invalides. In order to preserve the vista ending in the dome of the Invalides, M. Picard, the Commissioner, arranged the palaces of the diverse industries on each side of the continuation avenue. Two half-palaces at each end and two others in the centre form the group that borders on the east and west sides of the Esplanade des Invalides, all too narrow in width. Looking towards the dome, the buildings on the left were reserved for French work, and those on the right for the various foreign nations. All are of the lightest possible construction consistent with safety. The two palaces facing the quay are those of the National Manufactures, with curved porticoes, the work of MM. Toudoin and Pradelle. In extent these cover a surface of 12,000 square metres. In the large wall surfaces and panels are fine allegorical frescoes by such eminent men as Paul Buffet, Vauthier, Chabas, and so on. Of the two centre palaces looking south, that on the left is by M. Esquie, and is balanced on the right by one similar in extent, and following the general lines, by MM. Larche and Nachon. At the south end of the esplanade are two half-palaces by M. Tropey-Bailly for ceramic work, and for glass work, with the wonderful Invalides front, on the Rue de Grenelle. This elevation consists of two symmetrical façades, with a well-treated frieze in bas-relief representing the Decorative Arts and Labour. The grouping and, in fact, the general arrangement and treatment, of M. Tropey-Bailly's work is most happy. In front of the half-pavilion here shown stood a remarkable exhibit of Sèvres ceramic ware, the fountain. This is destined to stand in the Champ Elysées after that thoroughfare has recovered from the upheaval caused by the Exhibition works. The portico, too, also in Sèvres ware which also stood in the Esplanade des Invalides is destined to be re-erected in the Square of St Germain des Prés, or its immediate neighbourhood.

IN THE STREET OF NATIONS

the more important buildings are near the Pont des Invalides, where the Rue des Nations commences. Italy has on the Quai d'Orsay the largest and most imposing of all the foreign pavilions, a florid building in 15th-century style consisting of a cathedral-like structure, with suggestions of Venice, Florence, and Pavia. This has a central dome with four angle cupolas, a gilt. The windows, which are very large, are filled with tracery. The architects were MM. Carle Coppi and Salvaderi. The Ottoman Pavilion is more modest than the Italian, and has more reserve, and the work was entrusted to a French architect, M. Dubuisson, who has suggested one of the innumerable mosques of Stamboul. The United States Pavilion was bold and dignified

with a great porch on the river front, forming the background to the equestrian statue of George Washington. The building is simply planned, and effect is produced by the lavish use of statues, groups, and the omnipresent American eagle. The architects were MM. Coolidge and Morin-Fouliaux. Austria: The architect was M. Baumann, who has produced a pleasing exterior suggestive of the Louis XVI. style. In the Bosnia building the wooden eaves are very bold, and the corbelled-out balconies are suggestive of Turkish work. The architect was M. Panek, who adopted rather a rural style for its composition. Hungary was rather a medley of styles embodying nearly all that had existed since the foundation of the Magyar State. MM. Zoltan-Alant and Jambor, of Buda Pesth, were the architects. The British Pavilion was very small, and some of its neighbours. It was intended for the British Commission to make this the special show of our native construction and decoration, and the plan decided on was to reproduce an old English manor-house. Mr. Lutyens was entrusted with the commission, and he has given us in the north front a replica of that of Kingston House, near Bath, the other façades being adapted from contemporary buildings. Its construction was entirely of steel framework for easy and future removal, for which Sir B. Baker was responsible. Various well-known firms undertook the decoration and furnishing of the interior. The city of Bath sent the pieces of Elizabethan work in the library; the great gallery was adapted from the Cartoon Gallery at Wolsley, near Sevenoaks. Mr. Geo. Wragge has sent for this evening some photos and a cartoon of stained-glass windows in the dining-room. On the other side of an open space, on which stands the British Pavilion, is the Pavilion of Belgium, an exact reproduction of the Town Hall of Oudenarde, with all its florid Gothic detail and profusion of carving. This was entrusted to M. Acker and Mankels, who preferred to present to us the masterpiece of Flemish work in the 16th century 1525-1530. Now destroyed. Norway had arranged a pavilion distinct from Sweden, and the commission was entrusted to M. Anding-Larsen. It was entirely constructed of wood, lavishly coloured. Germany has quite a special appearance, with its elaborately coloured walls and exuberant detail. Next to it, in this row, is the Pavilion of Spain, the work of M. Josep y Velada, who has suggested the Sevillian type of architecture, the details being taken from various well-known buildings of the Renaissance. The pavilion has been recently destroyed, fetching about £1,000. Next we see the Pavilion of Monaco, which has presented us with an Italian type of architecture, and a fine tower suggestive of the Palazzo Vecchio in an imitation granite. Sweden was an extraordinary, and, indeed, inscribable, building, which I confess I am unable to describe to you. M. Boberg was the architect. Next comes next, the production of M. Magne, architect, in the Byzantine style, an imitation of a building with a stilted cupola covered with tiles. Serbia affects a florid type of Byzantine. M. Baudry was the designer. It is at present uncertain if any of these foreign pavilions will be preserved. In conclusion, the lecturer mentioned that the British made the best display of the furniture department. A hearty vote of thanks was accorded Mr. Connaught, on the motion of Mr. C. H. Brodie, seconded by Mr. Humphrey Slack.

ARCHITECTURE AT THE ROYAL SCOTTISH ACADEMY.

THE 75th annual exhibition of the R.S. Academy has just been opened, and on the fine lines of arrangement as for some years past. This provides a comfortable and easy inspection of the works exhibited, and gives general satisfaction to the public, whilst it reduces greatly the number of exhibits. Old as the institution is, however, it has never succeeded in providing, and probably never attempted to provide, a satisfactory arrangement for the architectural branch of the Academy—at least, in the way of bringing forward architectural designs for exhibition. In this respect the Glasgow Institute is far ahead of it. When, as was the case 20 or 30 years ago, architectural perspectives were all in water-colour, the lack of a special apartment was of consequence, and there was no unseemly contact between exhibits in the two departments of art. But of late years, the water-colour architectural perspective is a *rara avis*, and its

place is taken by black and white. These have generally been located along with the water-colour section—not much to the advantage of either.

In all probability the small octagon was designed for architectural drawings, but the light is sadly deficient, and nothing has ever been done to improve it. With the discovery and development of the "Luxfer" prism lights, there is no apology for the management continuing to keep this apartment in its present unsatisfactory state. But the commercial uses of the exhibition have always outweighed the academical, and the oil paintings have always usurped the lion's share of the rooms. Having by inadequate provision reduced the character and number of architectural exhibits to a minimum, it is little wonder that the architectural department has never been representative of the architecture of the day, except to a very limited degree. This year it is less so than it has been in former years. Glasgow generally did most for it in the way of providing the better class of design, and is this year conspicuously absent. The war outlay and other expenditure accompanying naturally tends to limit the prospects of the better class of design, and there is nothing this year to record worthy of note in this department. The architectural drawings are located in the south room on the north side.

Mr. W. Bailey sends a drawing of Gogar House, Midlothian (639), which is not a large mansion, but a Scotch house of considerable size, and has the good altitude, without which the details of the corbel-stepped gables and angle turrets are of doubtful character as ornamental features.

806, "The Hollies," Barnton, by Messrs. Hamilton, Paterson, and Rhind, is also of moderate size, with details of Georgian Classic. The only other design in this category is 809, "Fairhill," Surrey, by Messrs. Niven and Wigglesworth, which has an extensive plan, with a large circular corner tower and Flemish gables.

Public buildings bulk more largely as representative of street architecture. 621, "The National Bank of Scotland," Nicolson-street, occupies a corner site at Hill-street, and is erected in red freestone, of four floors and an attic. The style is Renaissance, with large circular windows on the ground floor, the façade in both streets pleasantly relieved with pilasters, pillars, and some good sculpture ornament judiciously arranged.

622, "Business Premises," Rose-street, is a large tenement of four floors, also Renaissance, with a large semicircular window and angle turret at the street corner. It is also executed in red freestone.

638, "Design for Municipal Offices," Dukinfield, by E. Maidman, shows a building of two floors of Elizabethan character.

795, "First Premiated Design for a Public Library," Falkirk, by H. Taylor, shows a plain and businesslike building. 798, "Kirkcaldy Police Buildings," by Messrs. Williamson and Inglis, is a plain and severe two-storied edifice of considerable extent.

802, "New Royal Infirmary," Glasgow, is a bird's-eye view, showing a building of portentous height, having six floors, presenting a very striking contrast to a somewhat similar architectural design by the same architect, Mr. H. J. Blanc, R.S.A. This latter is 618, "The Bangour Village Asylum," about which controversy has recently been vexing the public with accounts of the enormous amount of expenditure required to carry it out—something like half a million. The design is represented as a model located in the centre of the small octagon, and shows all the arrangements, which provide for the cottage accommodation of patients, administrative buildings, attendants' houses, &c. There is a church with tower, and recreation hall, all apart, with villa accessories in the way of garden-ground, &c., though these cannot be shown on the small scale of the model. Some villas are larger than others—those for males on one side of the extensive grounds, and those for female patients on the other. The designation of each building is printed legibly beside it, and there are a few vacant sites providing for extension.

810, "Public Library," Stirling, by H. Taylor, is a well-lighted and stately edifice, with ordinary Renaissance detail.

Ecclesiastical design also forms a leading feature of the exhibition.

632 is a water-colour perspective of Iona Cathedral as restored by Messrs. Honeyman and Keppin. The building stands in solitary grandeur,

with rather much of landscape round it, and the point of the spectator shown has not been very happily selected.

620, "St. Mungo's Parish Church," by Messrs. Dunn and Findlay, is built in Easter-road, with transepts and a large tower at side of its western front, with the usual arrangement of an interior having narrow side aisles. 628, by J. Manuel, is a very spirited sketch of "Jedburgh Abbey," or, rather, the south-east portion of it. 636 is the most original of this class of design. "United Free Church and Hall," Clydebank, by A. Paterson, shows a circular interior flanked with transeptal projections, and fairly succeeds in imparting to that novel plan a picturesque and not undignified character, without suggesting comparisons with the circus and the theatre.

640, "Blackridge Church," West Lothian, is a nice water-colour sketch of a village church with clerestory, transept, and very small aisle windows.

647, "New Chancel and Transepts for Holy Trinity Church," Melrose, by Messrs. Hay and Henderson, in Early Geometric Gothic, shows these additions to be very considerable contrasted with the church itself, which is too indistinctly represented, and looks like another building far away. "St. Serf's," Golden Acre, which is a northern suburb of the city, has had justice done to it in 796, 797, 803, 808, and 812. These are representations, however, of two separate designs by Mr. G. Watson. One shows the nave and narrow aisles and double transept of Decorated Gothic detail, with large buttressed and pinnacled tower, having a lofty but attenuated spire on top. The interior piers are without any impost mouldings and ceiling is a timber vault. The other design, which is selected, is a nave with transepts, chancel, and a central tower in Early Decorative Gothic. 807, "The Interior of St. Oswald's Church," by H. Kew, shows a good arcade with moulded capitals and bases on the pillars, and has no lath-and-plaster on the walls. 811, "Dean Parish Church," by Messrs. Dunn and Findlay, is also a church with nave, transepts, and clerestory, and the narrow aisle, with good tower and spire at the side of its front. The style is the plain Lancet Gothic with something of the Early Geometric. The transept is rather bulky, being evidently intended for nave and gallery, and the whole, like most others of its kind, lacks good proportion as to length.

799, "St. John the Baptist Church, Thaxted," Essex, by J. Mitchell, and 792, "Study for a Church," by W. M. Page, complete the list of churches. The former a good example of the English village church, and the latter a water-colour of the west front and tower, of Early English Gothic, with three lofty lancets and double pinnacles adorning the topmost weatherings of the buttresses in front.

There are also a few examples of public schools.

629, "School for Anstruther Easter," by Williamson and Inglis, has some odd-looking gables, and 630, "New Academy," Linlithgow, by G. Fairley; 634, "Another Design for Anstruther School," by J. Scott and Mr. Campbell, in cottage style.

633 "New Chapter Room," Queen-street, by P. L. Henderson, is the most interesting interior of the exhibition. It is a brilliant water-colour—giving a very good account of the details of decoration—with Egyptian pillars carrying a coiled projection, enlivened with Masonic symbols. The queen-post frames carrying the roofs are richly ornamented with much display of timber, and there is something like a white marble Roman altar standing in the middle of the long apartment. 661, "The Benedicite," is also a water-colour sketch of part of the mural decoration for the chancel of St. Ninian's Church, Glasgow, by W. Hole, R.S.A. There are five panels, each having its figure representing respectively the Green or Vegetable Kingdom, the Sea and all therein, the Animals, the Heavenly Bodies, and, lastly, the Servants of the Lord.

801, "Della Robbia Work in Pistoja," by J. A. R. Inglis, is an interesting water-colour sketch of an Italian arcade, with frieze of figures on a blue ground. The figures are extremely small, but indicate distinctly the various characters represented with great purity of colour and delicacy of detail. There are also a good many interesting sketches of architectural subjects.

The rural district council of Bromley, Kent, have raised the salary of their building surveyor, Mr. Winter, from £234 to £295 per annum.

THE NEW A.A. DAY COURSES OF INSTRUCTION.

AN important step forwards in the direction of providing more systematic training for those entering the architectural profession is foreshadowed in the scheme of day courses of instruction, to be brought forward for ratification or modification by a special committee at the meeting of the Architectural Association convened for this (Friday) evening. Twelve years ago the existing evening school at 56, Great Marlborough-street, W., was established, and under the direction of a strong and representative body of practising architects (nearly all of whom were trained in the A.A. classes) has done excellent work. We are glad to learn that the effort to extend its operations has resulted in the promulgation of a broad, simple, and feasible scheme for supplementing the present inadequate pupilage system. The present premises will be utilised for the next few years; but it is obvious the question of the building of an Architectural College will have to be faced soon. The present scheme is substantially guaranteed by some of the leading workers in the Association:—Messrs. Arthur Cates, H. L. Florence, Alfred and Paul Waterhouse, and Aston Webb subscribe £100 each as guarantors, while Messrs. Frank T. Bagge, Francis Hooper, G. H. Fellowes Prynn, John Slater, Lewis Solomon, Leonard Stokes, and David Seth-Smith, "with one another," make up another £500.

The subjoined is the report to be brought before the members of the Association at to-night's meeting:—

Early in the present session a strong Education Committee was appointed to consider and report upon the whole subject. This Committee consisted of Messrs. Cole A. Adams, F. T. Bagge, R. S. Balfour, G. B. Carrivell, Arthur Cates, B. F. Fletcher, H. L. Florence, F. T. W. Goldsmith, H. T. Hare, F. G. F. Hooper, P. J. Marvin, E. W. Mountford, Beresford Pite, W. A. Pite, H. W. Pratt, G. H. Fellowes Prynn, E. Howley S.M., H. D. Searles-Wood, W. Howard Seth-Smith, John Slater, Leonard Stokes, and Aston Webb, A.R.A. After six meetings their report was presented. The General Committee of the A.A. has practically adopted the whole report with few amendments. The proposals are as follows:—

1. That the Studio be opened during the day, and that Day Classes be established forthwith. The work in these Classes and in the Studio to be of a preparatory and supplementary nature suitable for those who have entered or are about to enter Architects' offices as pupils.
2. That this branch of the work of the Architectural Association be known as the Day School, while the present classes be called the Evening Classes.
3. That the first course of studies be arranged to cover one year, but students be afforded the opportunity of taking a second year in the Studio when they might also attend some of the Evening Classes.
4. That each year be divided into three terms—namely, Autumn, Spring, and Summer—consisting as nearly as may be of 13 weeks each.
5. That the work in the Studio be supplemented by a certain number of lectures on History and Construction, so that the students may better understand their work.
6. That a Master of the Studio be appointed at a salary to be fixed by the Committee, who shall deliver lectures on the History of Architecture and Elementary Building Construction. The Master to nominate an Assistant to help him in the Studio, such Assistant, if approved, to be remunerated as may be deemed expedient by the Committee.
7. That the Studio be open from 9.30 a.m. to 5 p.m. (1 p.m. on Saturdays), and that the Assistant Master be in attendance during these hours. The Master himself, however, would attend at stated times to instruct the students and deliver his lectures.
8. That the fee for the full course be 12 guineas per term or 35 guineas per annum; but students taking only the lectures to pay a fee of 2 guineas per term for each course, or 5 guineas per annum. Students wishing to enter the Day School must submit a letter of recommendation.
9. That at payment of the fees for the first year's course students shall be eligible for election as Ordinary Members of the Association without paying the usual entrance fee.
10. That students should be encouraged to cultivate a thorough knowledge of the French and German languages (if they have not already acquired same), as these languages are particularly useful for purposes of study and when travelling abroad.
11. That the Studio Library be augmented as may be found necessary, and be available at all times when the Schools are open.
12. That the management of the School be under the direction of the Committee of the Architectural Association, assisted by an Advisory Board of eminent Architects and other gentlemen.
13. That the following subjects be included in the Curriculum:—

FIRST YEAR'S COURSE.

- (a) The use of instruments and scales.
- (b) Freehand drawing.
- (c) The five Orders of Classic Architecture.
- (d) The elements of the various Styles of Architecture.
- (e) The principles of Mechanics.
- (f) Elementary Construction.
- (g) Sketching and Measuring details and portions of existing buildings.

(h) Thirty-six lectures on the History of Architecture (illustrated by visits to buildings and museums).

(i) Thirty-six lectures on Elementary Construction and Materials (illustrated by visits to workshops and buildings in progress).

Each student will be expected to take up a course of reading under the direction of the Studio Master.

SECOND YEAR'S COURSE.

(a) Continuation when necessary of the subjects forming the first year's course.

(b) Perspective and Slogography.

(c) Descriptive and Applied Geometry and Graphic Statics.

(d) Principles of Architectural Design.

Each student will be expected to take up a course of reading under the direction of the Studio Master.

N.B.—Students taking a second year in the Studio should attend such lectures or classes, day or evening, as the Master may advise.

The Master of the Studio will direct students as to their vacation studies.

The following is an approximate estimate of revenue and expenditure per annum after the first twelve months' working (see footnote):—

ANNUAL EXPENDITURE (FIRST AND SECOND YEAR COURSES).

Salaries, advertising and printing, library	£	s.	d.
books, contingencies, &c.	650	0	0
Estimated balance	37	15	0
	687	15	0

ANNUAL REVENUE (FIRST AND SECOND YEAR COURSES).

	£	s.	d.
Say twelve first-year students at 35gs. ...	441	0	0
Say five first-year students taking lectures only, at 5gs. per annum	26	5	0
Say six second-year students at 35gs. ...	220	10	0
	687	15	0

N.B.—In consequence of there being no second-year students during the first twelve months working the revenue arising from them would not be available, and there would consequently be a loss of £182 15s. on the first year's working on the basis of the above-estimated numbers of students, which have been put at the very low computation of twelve students taking the whole first year's course with five others who would only attend the lectures, and six students taking the second year's course.

AMERICAN ENGINEERING COMPETITION.*

THE above is the title of a small volume—a reprint of articles that appeared in *The Times* during the early part of last year. The articles are the result of an inquiry made towards the end of 1899 by Mr. English, engineer, who visited the chief engineering centres of the American States. The conclusions of the writer have been generally accepted by critics and engineers, both in England and America, though a few have taken exception to the remarks, amongst them the veteran ironmaster, Sir Lowthian Bell, and several American writers who considered the picture *The Times* drew as exaggerated or overdrawn. There is little doubt, however, that the British iron industry does not compare with that of the United States and of Germany. British manufacturers have lost a great deal of trade, in spite of its geographical advantages and colonial possessions, and it was because of this *The Times* appointed their special correspondent to inquire into the question. These well-written articles ought to open the eyes of our manufacturers to the growth of American industries, the size of the factories in the States, the completeness of the plant, the unrestricted way the men work, unchecked by trade-unionism and other restraints. The official figures given, and the imports and exports of the two countries are astonishing, and, taking the trade in manufactures which this country has always looked to for bringing the foreign trade essential to our existence as a great nation, it is said that in the States there was, to go back over 10 years, an excess of more than 28 million dollars of imports over exports. In 1898 the American exports had gone up to £276,343,000, and the imports had fallen to £128,343,000; "therefore, instead of buying more than they were selling, as in the first period, the Americans were selling more than they were buying, and that to an enormous extent." Our total excess of imports over exports was more than 89 millions, so that both countries 11 years ago imported more than they exported. In 1898 our exports had fallen to £294,013,988 in value, but our imports had risen to £470,378,583, showing an excess of imports over exports of

* American Engineering Competition. Articles reprinted from *The Times*. London and New York: Harper and Brothers.

£176,364,595. "It will be seen, therefore," says the author, "that in this year, whilst we according to official figures, bought 176 millions worth more than we sold, the Americans sold over 128 million pounds' worth more than they bought." These figures speak for themselves. On the other hand, it must be said that our large imports bespeak industrial success and wealth and that the "possession of wealth is the measure of material prosperity," as has been said. We must not trust too implicitly to returns, however correct. As the writer says, the bulk of business done should be stated in terms of the population. According to this view, the American returns for 1898 gave merchandise imported for consumption at 33s. per head, whilst our proportion of imports per head of population is £11 14s. 1d. Our exports also showed per head for the same year nearly double as much as America. But these figures are apt to mislead, and the writer gives us many proofs of other factors, such as the blending of the blood of other races in America, the development of engineering, and the value of materials for making pig-iron, such as ore, coal, and flux. These are advantages which the Americans have, whereas our coal is getting deeper and more difficult to obtain. Skipping a few interesting chapters on imports and exports, heavy iron and steel trade, ore supplies, and manufacture of steel, we come to a chapter on "Structural Steelwork," as of more interest to the builder and engineer. It is well to remember that the Americans have imposed the prohibitive duty of four dollars (16s. 6d.) a ton on foreign pig-iron, £1 12s. 3d. on steel rails, &c., so as to keep their home market in their own hands. Of course, this duty explains the falling off in our exports of iron and steel to America. In constructive steelwork great advances have been made in America, and many facts are given to prove this. The demand for bridges in the United States is great. Where one firm the Carnegie Steel Company, can construct a railway bridge across a river as wide as the Thames at London, simply to connect their two factories, we may imagine bridge-building is not expensive. Those who contract for structural work are often producers of steel. The Carnegie Company have over 100 draughtsmen in their Pittsburgh office, and they will furnish designs for a building containing thousands of tons of steel without charge if they get the contract for the material. "A marked contrast," as the writer says, "to our usual procedure with heavy architect's fees." Steel has largely taken the place of wood, brick, and stone for big steel buildings, and one of these, 20 to 25 stories high, will contain 20,000 tons of steel. The parts are prepared accurately to size at the works, so that they have only to be put in place and erected. The holes are drilled for rivets and bolts. The writer relates that "arriving at an hotel I saw out of my room window a substantial stone building. Four days later it had entirely disappeared. In fact, the visible part went almost in a night. A little over a week after there was what appeared to be an enormous steel cage in the same place. This was the framework of the new building fast working up to the 20 stories of its next-door neighbour. The foundations of the new structure had been put in whilst the old one was being pulled down." Many of these steel buildings have masonry panels filled in to give protection from the weather. The parts are bolted or riveted together, the whole of the metalwork is protected by cement or terracotta. The writer thinks our steel-makers may take a leaf out of the Carnegie book, and introduce steel building into this country. If an architect does not like to use steel in place of wood, the steel-maker employs an expert to show it can be done. Reference is made to the Aftara bridge which created some excitement, and the writer visited the Pencoyd Works, near Philadelphia, where it was made. In England it was thought impossible for the bridge to be made in the time; at Pencoyd they work in 10-hour shifts by day, and 12-hour shifts at night, and use 170,000 tons of steel a year, and have 11 35-ton open-hearth furnaces. Other appliances used include a Wellman tilt furnace, which can be revolved, and the 70-ton of molten steel poured out as from a teapot. Other improvements in machinery and practice show the greater value placed upon time at labour by the American manufacturer, and the lavish expenditure to serve their ends. Many instances we notice. Thus, if a company is to how many castings of a given type are required

y will supply a foundry laid out for the purpose. Experts are employed for any special design, and special factories provided. The author says: "In America there are a number of designing engineers; but the work is more in the hands of men who have special experience in the execution of work." The remarks on "Locomotives" ought to open the eyes of the public. We remember the excitement caused last year by the purchase of American locomotives for the Midland Railway, and the writer goes on to point to the satisfactory position of British engineering industry; but we leave this and other questions to the interested reader. The chapters on machine tools are instructive; the writer relates conversations with managing partners of great American firms. The impression is that England has failed to go on in the old way; Americans are never satisfied, and many instances are given. As remarks on the labour question are, we think, and, but we have no time to discuss the arguments here. Every engineering firm and manufacturer should read these reprinted articles.

BRITISH AND IRISH BUILDING STONES. — XXI.

RECONSTRUCTION.

THE rocks in this county are Millstone Grit, Carboniferous Limestone, Old Red Sandstone, Wenlock Shale, Taranon Shale, Mayall Sandstone, Bala and Llandeilo Flags, and Brynnydd Beds. Brecon is built on Old Red Sandstone and Alluvium; Builth: Wenlock Flags and Shale, Alluvium, Greenstone; Crickhowell and Hay: Old Red Sandstone, Alluvium. Evidence of Glacial action are seen in the grooves and striations on the rock surfaces in the south of the county. Glacial Boulders in the drifts are locally derived from the local rocks, but Chalk boulders are met with in some places. Recent sands and gravels are found in the river valleys. This county is chiefly on Old Red Sandstone; Silurian rocks are found on the north-east, and the South Wales Coal Measures, with Millstone Grit and Carboniferous Limestone, are found along the north-west boundary. Old Red Sandstone is everywhere used for walling and dressings, and the Silurian slaty rocks for walling and rough steps and quoins, with "Old Red" dressings. The Carboniferous Limestone is used for rough walling, lime-burning, road-stalling, and as a flux for iron ore in the South Wales blast furnaces. Millstone Grit, a few hundred feet thick, is found along the northern margin of the coalfield. The principal quarries in it are: Penwyllt Silica, worked by the Penwyllt Dinas Silica Co.; Guborfafr, Penderyn, Messrs. N. B. Allen and Co., Ltd.; Sandpit, Penwyllt, the Dinas Silica Co.; Cilisanws, No. 1, Mr. J. James; Cwganw, No. 2, Mr. L. Rogers. There are mines at Cwmcoirin, Glynneath, Messrs. J. B. Jenkins and Co.; Lluet and Tongylfach, Pont-y-Vaughan, worked by the Abernart Dinas Silica Brick and Cement Co.; Torfole, Penderyn, Messrs. N. B. Allen and Co.; and Kihpeste and Lluet, Glynneath, the vale of Neath Dinas Silica Brick and Cement Co. The principal Carboniferous Limestone quarries are Gilwern Gdach, the Blaenavon Co., Ltd.; Previl No. 1, Nant-y-Bwch, the Ebbw Vale Steel, Iron, and Coal Co., Ltd.; Vaynor, Cefn Coed, Messrs. Cransbury Bros.; Llanelli, Clydach, the Llanelli Lime and Stone Co.; Clydach, the Clydach and Abergavenny Lime and Stone Co., Ltd.; Penwyllt, the Penwyllt Lime and Limestone Co., and Llwynon, Penderyn, Messrs. Howell and Co., Ltd. There are smaller quarries of Black Rock, Blaenonney, Cnewrt, Dinas, and Hart, Penderyn, all worked for lime-burning. The Black Mountains, or Breconshire Beacons, of Old Red Sandstone, the rocks on the summit consisting of quartzose conglomerates, underlying which are red, yellowish, and greenish-grey sandstones, with an upper bed of white, nearly quartzose conglomerate, which is really a transitional deposit between the brown stone series and the conglomerates on the summit of the hills. Owing to the presence of much mica in the bedding planes of these sandstones, they are frequently fissile, and are quarried as paving slabs and stone tiles. The rocks described are classified as Upper Old Red Sandstone. A division known as "Lower Old Red" is sometimes called the "Ornstone series" from the presence in it of beds of marlstone filled with concretions of compact

limestone. These beds extend as lenticular masses from a hundred yards in length to two or three miles, the limestone in some places entirely displacing the marl. The Lower Bed consists chiefly of massive beds of dull red and greenish-grey micaceous sandstones, the fine red rocks having in places marl holes, which unfit them for dressed work. Speaking of Old Red Sandstone generally, all fine-grained dull red micaceous blocks should be avoided as being bad weather stones, and those only of a greenish-grey or reddish-grey and fine conglomerates with quartz pebbles should be selected for basecourses or other exposed work. The same quarry frequently furnishes block paving, fine-grained conglomerate, and in colour red and greenish-grey, stone. There are quarries opened wherever stone is required for local use, a few of the most important are: Incline, Llangatock, Mr. T. Jones; Tregraig, Bwlch, Mr. D. Mainwaring; Wenallt, Gilwern, Mr. T. Regnallt; Cillunow, Llanigon, Mr. J. Evans; and Brynderwen, Brecon, Mr. F. Phillips. These are in constant work; but others, which are used for temporary purposes only, are abandoned or closed when the stone is no longer required. It may be as well to add here that the Old Red Sandstone of Brecon and the adjoining counties is the equivalent in time of the Devonian rocks of West Somerset, Devon, and Cornwall, amongst which are the Torquay and Plymouth limestones. As pointed out before, the "Old Red" is an estuarine or inland-sea deposit, whilst the "Devonian" is altogether marine. The maximum thickness of both deposits is about the same—viz., 10,000ft. to 12,000ft. The Silurian rocks at Henallt, Builth, Mr. J. Prichard, are worked for rough slate, and those at Cnwch Rhayader, by the Birmingham Corporation, for grits and conglomerates. A quarry at Craig Gallt-y-Bont, Rhayader, is also worked in Silurian rocks by Mr. W. B. Hamer. None of these quarries furnish stone suitable for dressed work, and it may be said that the quarries in this county furnish stone for local use only. Some of the finest dry stone walling the writer has ever seen is executed with the fissile stones of the "Old Red" when they vary in thickness from 1½ in. to 3 in. The beds of the stones are parallel, and as perfect planes as if they were rubbed, and the joints are frequently as smooth and at right angles with the beds. In fact, the wall faces, when carefully executed, look like the best ashlar, the courses are all so regular, and the joints so clean and true. Bricks in this county are made of Drift clay and Coal Measures fireclay. Finer firebricks are made with Coal Measures clay and ground millstone grit.

CARMARTHENSHIRE.

Upper Coal Measures, Middle Coal Measures (Pennant Grit), Lower Coal Measures, Millstone Grit, Carboniferous Limestone, Old Red Sandstone, Ludlow Beds, Wenlock Beds, Lower Silurian rocks not yet classified. Carmarthen is built on Silurian rocks and Alluvium; Kidwelly: Coal Measures, Millstone Grit; Llanelli, Coal Measures, Alluvium; Llandovery: Alluvium, Llandovery Beds; Lougharne, Old Red Sandstone; Newcastle Emlyn: Alluvium, Silurian rocks; Saint Clears: Upper Silurian Sandstone, Alluvium. North of Whitland Abbey, Carmarthen, Llandeilo Fawr, Llangadock, and Llandovery, the county is occupied by beds of sandstone, conglomerates, shale, and slate, all belonging to the Silurian system, but not yet worked out and classified by the Geological Surveyors. Small areas have been thoroughly examined by geologists and classified with special reference to the fossil contents of the beds; but the whole area has not yet been brought into any general systematic arrangement, such as has been adopted in other districts. South and west of the line indicated above are found narrow beds of the Upper Silurian, Wenlock, and Ludlow Beds, followed by Old Red Sandstone in the west, and Old Red Sandstone, Carboniferous Limestone, Millstone Grit, and Coal Measures in the south, the latter forming part of the South Wales Coalfield. Coal Measure Sandstone is worked at Bettws, Ammanford, Mr. David Davis; Black Mountain, Blaen Llynfell, The Black Mountain Co.; Cenrhos, Burryport, Mr. H. Evans; Cwmryhyrin, Ammanford, Mr. W. Jenkins; Dimpeth, Llanelli, Mr. J. Williams; Penylan, Llanelli, Mr. L. P. Nott; Ty-lha, Llanelli, Messrs. D. Davies and Sons; Tyr Lan, Llanelli, Mr. D. Thomas; and Waunwasted, Kidwelly, Messrs. Smart. Millstone Grit is quarried at Greenhall, Mynydd-y-Gareg, Messrs.

Stephens and Co.; and at Llyn and New, by the same firm. The strata are worked by them exclusively for silica. Old Red Sandstone is quarried at The Hills (South), Langharne, by the Corporation of Langharne, and along the outcrop around by the South of Caermarthen to the Brecon county boundary. Carboniferous Limestone is quarried chiefly for limeburning at Glangwynlais, Llanfihangel, Aberthick, by the Llandeilo Lime and Stone Co.; Penmynydd and Craig, Kidwelly, Mr. A. Young; Pistill, Llandeilo, Messrs. D. Jones and Co.; and at Garn, Llanfihangel - Aberthick, Mr. J. Jenkins. Silurian Sandstone is quarried in a G.W.R. siding between Bronwydd Arms and Conwil, north of Caermarthen; Penbach, Ciffing, Mr. J. Hurel; Pentremawr, Llanpumpaint, the Carmarthenshire County Council; and in various other places in or near any village in the county, in the Silurian rocks. Lower Silurian slate is quarried at Whitland Abbey, Gilfach, by Mr. A. Pritchard. The colour of the Whitland Abbey slate is greenish-grey, something like Westmoreland slate, but the former frequently abounds with small cubes of iron pyrites, which are found imbedded in the surface of the slate. The cleavage of the slate rocks here is not so fine as that of the Penrhyn slates, which is an advantage from the architect's point of view, as they give a thicker and more substantial slate. All the rocks of the county yield stone, which is used for building almost entirely within the county. About three-fourths the entire surface is occupied by Silurian strata, which yield fairly good walling stone and rough quoins and sills, but nothing suitable for fine-dressed work. The town of Llandeilo in this county gives the name of "Llandeilo Flags" to a series of beds of bluish-grey and black micaceous and calcareous flags, which are classed as Upper Cambrian rocks. They are chiefly remarkable as yielding the earliest limestone of importance. Alluvium, and Coal Measures clay are used for brickmaking.

THE FIRE RESISTANCE OF DOORS.

SOME time ago we brought to our readers' notice the results of experiments conducted by the British Fire Prevention Committee on pine and teak doors, and we now refer to other reports of that committee, edited by Mr. Edwin O. Sachs, the chairman of the executive council, on doors of 2½ in. thick of oak and of teak, both made in three thicknesses. These doors were constructed with wood pins, and the boards are not grooved and tongued, but butt-jointed and secured by ½ in. double wedge-shaped wooden pins of the same material as the doors, driven through the whole thickness. They are hung with wrought-iron cross-garnett hinges screwed to doors and frames, nine lin. screws to each hinge, and the doors were secured on the outside with four 6 in. iron barrel bolts to frames 4½ in. and 3 in., rebated and splayed. The object of the test was to record the effect of a fire of one hour and a quarter, gradually increasing to a temperature of 2,000° Fahr., the fire being applied on one side, and the doors to open inwards on the fire side. The door openings were 7 ft. by 3 ft. The oak door resisted for 60 minutes, when flame came through one corner, and glow appeared at bottom of door. In 67 minutes the boards at each side of centre joint bulged outwards 1½ in., and joint opened. In 75 minutes the centre opening widened, and flames came through, and the flames at top of door extended across whole width; two of the three thicknesses had disappeared, the outer thickness remaining in position. The teak door began to show flame at top corner in 17 minutes; in 36 minutes the flame had extended across two-thirds of top of door; in 57 minutes glow appeared at bottom of door; and in 75 minutes flames extended across the whole of the top of door, and holes along bottom. The inner thickness had disappeared, the centre thickness was charred through, but in position; and the outer thickness had about 4 in. of the top burnt away. We refer our readers to the automatic records of the tests and the observations made from the outside and inside, and also to the interesting photographs given, showing the progress of the fire and condition of both doors after certain intervals. From the report we gather that the oak door for one hour presented an invulnerable appearance, while the teak door showed the flames in the top corner in 17 minutes. The outer thickness of the teak door was almost intact, except the top where flames had broken

through, the outer thickness of the oak door also remained in position. These tests confirm the view that solid doors or doors of well compacted substance and uniform thickness resist the flames for a considerable time.

Turning to the tests with deal doors, one ledged with inch boarding and the other a 2in. deal, four-panelled (moulded both sides) door, we are able to compare the fire resistance. The object was to record the effect of a fierce fire of one hour, increasing to a temperature of 2,000° Fahr. The deal-ledged door of wrought yellow deal with vertical boards, tongued grooved and beaded, each 6in. wide and 1in. thick, strengthened by ledges 6in. by 1in., chamfered on edges, and screwed together with 1½in. screws. Frame of yellow deal 4½in. by 3½in. rebated for doors, oak sill, door hung with pair of 24in. cross-garnetts. In four minutes flame appeared over top of door, in eight minutes it had extended all along the top, in 21 minutes the upper half of door was fully alight, and in 25 minutes the test was closed, as the door was practically destroyed. The deal four-panel door resisted the flames for 15 minutes before they appeared over top rail, a minute later flame came through top panel, in 21 minutes they came through lower panels, and in 25 minutes the door was practically destroyed. The observations on inside and outside, and the photographs given of the two doors showing their condition during certain intervals of time during the test, are of interest. These door-tests have a practical value for architects and others interested in fire resistance, as they show the resistance offered to fire by doors of ordinary construction. We recommend to our readers an attentive perusal of these instructive reports, several of which have been published by the committee, and which we have noticed.

DRAINAGE CONSTRUCTION.

AT a meeting of the Society of Engineers held at the Royal United Service Institution, Whitehall, on Monday evening, a paper was read on "Notes on Certain Details of Drainage Construction," by Mr. Gerard J. G. Jensen. The author, at the outset, pointed out the desirability of giving attention to the merest details in drainage construction, and he then proceeded to discuss certain matters which up to the present have been misunderstood or neglected. Amongst these, none, he thought, claimed greater attention than the construction and arrangement of ventilation-pipes. He drew attention to the reprehensible practice of constructing ventilation-pipes of iron, as they were invariably found to rust in the interior, thereby not only deteriorating and making renewal necessary, but also becoming blocked and thereby rendering insanitary that which might otherwise be a good system of drainage. This latter, he pointed out, was especially serious in view of the fact that the householders who have their drains periodically inspected are still in the minority. Amongst other details of construction pertaining to ventilation-pipes, he further brought under notice the still inexact knowledge regarding the action of drain air upon the human constitution. Pending a more complete knowledge on the subject, he urged the necessity of erring upon the safe side in choosing positions for liberating drain air through ventilation pipes. As tending to prove the evil effects which might ensue from neglect on this point, he instanced the case of a large school in which he had traced the cause of various outbreaks of follicular tonsillitis to the faulty arrangement of ventilation pipes, which in most cases were placed near the dormitory windows. The wards of a recently-erected sanatorium at the same school, he stated, were under similar influence, and though it still remained to be seen whether any evil results would ensue, he regretted that those about to be experimented upon were not guinea pigs, nor rats, but human beings. Continuing, the author touched upon the still frequent practice of providing waste-pipes with hopper heads at the points at which branches from fittings within the house join the main pipe. He could imagine no more insanitary and offence-giving construction, and thought that the fullest measure of the evils of the system was perhaps experienced under the, at present, fashionable flat life. An alternative and more satisfactory system of arranging and constructing waste-pipes was described, as were also the most efficient methods of arranging their discharge into surface traps. Some observations on manholes and drain

joints followed, the paper concluding with some remarks on overflow-pipes from lavatory basins, baths, and sinks. The author considers that too little attention is, as a rule, bestowed upon these details, and suggests that the musty smells in bathrooms and similar apartments might frequently be ascribed to faulty overflows. The continued manufacture and use of uncleanly overflow-pipes, he thought, must be one of the wonders of house drainage, since their evils must be patent to all.

A TIMBER-FRAMED MUSIC-HALL.

THE Music-Hall of the Pan-American Exposition, at Buffalo, will be, from the drawings and details published, a structure of some importance, from at least a constructional point of view. It is to be 70ft. high to the main roof, and forms a square of 150ft., the main walls forming the sides of an octagon, with semi-octagonal projections on alternate sides. This arrangement will therefore come within the circumscribing square. Internally these projections will be elaborately treated. Their roofs intersect the main walls, which are about 70ft. high. The central hall of octagon will be formed by eight arches which will intersect the lower domical ceiling, to be highly ornamented and adorned in each of the segments of dome by ornamental shaped windows of rich design; the structural dome above is much higher, and is formed of trussed timber, framed so as to neutralise the thrusts. The details of the building are given in the *Engineering Record* of Feb. 9, from which we learn, "Around the inside of the main walls there is a flat annular roof about 15ft. wide in the clear, and about 50ft. high from the ground, with a hipped skylight in each of its eight panels. In each panel adjunct to the semi-octagonal extensions there is a 10ft. by 14ft. pedestal, 15ft. high, for a statuary group. From the annular roof the walls of the second story of the music-hall rise to a height of about 90ft., where they terminate in a cornice, above which the roof dome rises to a total height of about 130ft. terminating in a crown-shaped cornice enclosing a flat roof about 39ft. in diameter. . . . In the interior there is an unobstructed octagonal auditorium about 100ft. in diameter, with domed ceiling rising 67ft. above floor." Above this rises the framing or trusses of the external dome. A centre ventilating shaft traverses this external dome, also the light shafts for each of the windows in domed ceiling panels. The plan practically occupies the centre area of the circumscribing square of 150ft.

OBITUARY.

MR. THOMAS R. JACKSON, architect, of New York, died last week, aged 74 years. He was born in London, but, when five years of age, his father emigrated to New York, and established a bookseller's business in Broadway. The son was placed in the office of the elder Upjohn. Among his work in New York are the old Academy of Music, on Fourteenth-street; Wallack's, now the Star Theatre; Tammany Hall; the Jerome Park Clubhouse; and the building on Madison-square, originally intended as a private residence for Mr. Lawrence Jerome, but occupied subsequently by the Jockey Club and the Manhattan Club. Later, Mr. Jackson was appointed by the Secretary of the Treasury, Superintendent of the Federal Buildings in New York, and, in the five years during which he held that office, much important work was carried out under his supervision.

MR. BENJAMIN SILLIMAN, another well-known architect in New York, also died in that city recently. He was a son of the famous Professor of Chemistry in Yale University, and himself graduated there in 1870. After graduation, he studied architecture for three years at Charlottenburg, and, returning to the United States, became a member of the firm of Vaux, Withers, and Co. On the dissolution of this firm, he established himself in business alone, and designed some noted structures, among others the Morse Building, on Nassau-street, one of the first many-storied office-buildings.

Through the munificence of Sir E. Walter Greene, Bart., M.P., of Nether Hall, a new organ, by Messrs. Henry Willis and Sons, of London, has just been erected in Thurston Parish Church. The instrument occupies an organ-chamber on the north side of the chancel.

Engineering Notes.

CARDIFF.—At this part for some years past a gigantic scheme of reclaiming land for dock purposes has been in progress. On the reclaim land a new dock of large dimensions is being formed, with a separate entrance lock and communicating passage with the Roath Dock, open some years ago. The contract is being executed by Messrs. Topham, Jones, and Railton, contractors, of Great George-street, Westminster. The area of the new dock is 50½ acres. Its length is 2,250ft., with a breadth of 800ft. between the walls, and a depth of 50ft. below the coping which is the same level as at the Roath Dock. At the north-eastern end, however, where a passage to the Roath Dock is being made, the water area spreads out to 1,000ft. The narrowest part of this communicating passage is 90ft., the length being about 800ft. The entrance to the dock consists of a lock 800ft. long by 90ft. wide. The dock itself will be finished early next year; but the excavation for the lock has only been commenced.

CHIPS.

A Local Government Board inquiry was conducted at the Sunderland Town-hall last week by Mr. M. K. North, A.M.I.C.E., into the application of the corporation for sanction to borrow £73,000 for purposes of electric lighting. The electric engineer, Mr. J. F. C. Snell, explained the plan and proposals.

At the Norwich Consistory Court, last week, citation was issued for the reforeshing and repewing and refitting of the nave and aisle of West Wind parish church, the cost to be borne by Mr. W. Lancaster.

A meeting of the Birmingham Archaeological Society was held recently, when a description of the Middleton Hall was given by Mr. Egbert d'Hamel. Mr. De Hamel described the hall as a interesting old mansion situated on the extreme edge of Warwickshire, on the high road between Coleshill and Tamworth. It had been a notable residence for a period considerably earlier than the Norman Conquest. It possesses an ancient chapel and at one time maintained its own private prison. The old mill is one of the oldest in the country, the internal arrangements being just as they always were.

Last week, Bishop Sandford dedicated two stained-glass windows, each of two lights and tracery, in St. Andrew's Church, Beamish, ascribed for by the parishioners and friends of the late vicar, the Rev. J. Crennell, M.A. They are situated on the south wall of the chancel. One is filled with figures of St. Andrew and St. Peter, as the tracery is of foliage design. The larger depicts Christ as the "Good Shepherd." The subject in the second light is "Christ, the Light of the World," after Holman Hunt's painting. The memorial has been executed by Messrs. Wales and Strang, of Newcastle-on-Tyne.

New board schools in Love-lane, Fletton, Hunt were opened on Thursday in last week. Accommodation is provided for 240 infants on the ground floor, and for 360 in the mixed school on the first floor. The schools are from the designs of Mr. V. Boyer, architect, of Peterborough, selected in an open competition, and are planned on the central hall system, the classrooms being divided therefrom by glazed sliding partitions. The central hall on each floor is 76ft. by 26ft. On the ground floor there is a room for babies, and three classrooms each 24ft. by 19ft. The walls are of Fletton brick with Ketton stone dressings. The contractor was Mr. J. L. Bridgefoot, of Woodstone, and the outlay has been £6,000. The girders and stanchions have been provided by Messrs. Measures Bros., London, the wood block floors being laid by Messrs. Geary, Walker, and Co., of London.

Ald. Fairless and the assistant borough engineer (Mr. Hodgson) waited, on behalf of the Sunderland Corporation, upon Mr. Harrison, the engineer to the North-Eastern Railway Co., at the company's offices in Newcastle, the other day, with a view to pushing forward the scheme for the new high-level bridge across the Wear from Deptford to Southwick. Parliamentary powers for the construction of the proposed bridge have already been obtained. Mr. Harrison stated that he was present engaged in preparing drawings for the new Tyne bridge, which drawings would be completed in April or May next. He added that the men who were engaged upon these would also have to prepare drawings for the Deptford and Southwick Bridge. The Sunderland drawings would be commenced about May next, and would take about three months to complete. The contracts would probably be let about the fall of the year, and the work commenced about the early part of 1902.

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"BUILDING NEWS" DESIGNING CLUB.

NINTH LIST OF SUBJECTS.

A block of Public Baths and Washhouses, comprising 2 first-class slipper-baths and 20 second-class slipper-baths for men, also 5 first-class slipper-baths and 13 second-class slipper-baths for women. Each department to have small waiting spaces or rooms, a w.c., and a toilet-towel place. The ticket-office to be so placed as to serve for both men and women's departments, as well as for the laundry entrance, which is to be distinct from that of the baths. The women's baths to be on the first floor, extending the whole length of the frontage. The washhouse to provide for 30 tubs and 30 drying horses and two hydros; adjoining the washhouse provide an ironing room, with two mangles and two ironing tables and an ironing stove. Two w.c.'s for cashiers. The superintendent's office is to be centrally placed, for efficient supervision. Provide pass-door between the first and second class men's bath departments, for use of attendant, and upstairs provide a small enclosure for attendant supervising both first and second class baths for women. In basement provide an establishment laundry, with soap-tub, washing-tubs or two, small mangle, one hydro, and an ironing-table

and stove. One w.c. for staff. An engineer's room, with 5 H.P. engine. Officers' mess-room. A boiler and heating-room, with two boilers, 12ft. by 6ft. each, and a coal-place. On the first floor provide a general store reached direct from washhouse by spiral staircase. Put asphaltic flats over rear buildings which will be of one story only. The site facing the south is 80ft. wide towards the street, with houses on either side, and 64ft. deep. Light cannot be obtained on any but the frontages of the land, and access only from the street. Chimney shaft from boilers 60ft. high. Use red brick and stone dressings, and slates for roofs. Treatment, a plain rendering of the Renaissance style, with shaped gables, not bald in effect, but made appropriate to a municipal block of buildings. The pavement is level, and there will be a forecourt 10ft. deep inclosed with dwarf wall and wrought-iron railing. Ground floor 2ft. above level of street. Scale, 8ft. to the inch for elevation and section; plans may be drawn, if necessary, 16ft. to the inch. Include a sketch view. Size of paper, 24in. by 18in.

DRAWINGS RECEIVED.—"Maori," "Brush," "1901," "Pat McKann," "Tom Thumb," "Iolanthe," "Jove," "Pencil Point," "Robin Hood," "Cambria," "Dan," "Gow Chrom," "Lisca," "Taffy," "Pierrot," "Quercus," "Perseverance," "Primus," "Absque Labore Nihil," "Blom," "Brutus."

Correspondence.

ANTI-RESTORATIONISTS AT WESTMINSTER ABBEY.

To the Editor of the BUILDING NEWS.

SIR,—When, on the death of Mr. Pearson, a prominent member of the S.P.A.B. was appointed as architect to the Dean and Chapter of Westminster, I confidently expected that the misdeeds of Scott and Street in tampering with the venerable fabric were to be expiated by a judicious policy of *laissez faire*, and that the works of "unnecessary repair" and of "architectural forgery," against which I have so often been pleased to hear Mr. J. T. Micklethwaite, F.S.A., declaim in eloquent periods, would be summarily stopped. I was mistaken, for it seems "the new presbyter is but old priest writ large." Soon after the new appointment was made scaffolding was erected against the north-west tower, and one of the mouldering and discoloured buttresses and pinnacles on the west front was replaced by a brand new one. One can imagine the way in which we should have been bidden to contrast the hard sharp arrises of the modern copy with the "time-worn and lichen-covered work of our forefathers." The work has now been continued to the niches on the north side of the tower. Nor do the reparations stop at the west front. In the south aisle of nave, the doorway leading into the north-west angle of cloisters has been replaced by a heavy and uncouth double one in oak, Late Fifteenth Century in style, so far as any has been followed in the battlemented cornice, and encumbered with big and thick iron strapwork, of a type that would look clumsy and ill-proportioned if applied to a sea-going chest. This door is screened off from the aisle by an insignificant property lobby, which offends the sense of proportion even in the presence of eighteenth century marble monuments. In the cloisters themselves the gifted architect has been trying experiments in whitewashing. Part of a bay was treated with lime and water, and another part with a mixture in which, I am told, white lead formed an ingredient; but I am glad to hear that the proposal to freshen up the cloisters by coating them with whitewash failed to commend itself to the Dean and Chapter. I shall narrowly watch developments of the anti-restorationist movement at the Abbey, and am, &c., ANTI-SCRAPE.

THE PRESENT CONDITION OF THE BUILDING INDUSTRY.

SIR,—Mr. Thomas Blashill's remarkable and suggestive paper, which you reported last Friday as read by him before the Surveyors' Institution, covers a large field, and necessarily opens up many subjects for discussion. I only propose to direct attention to one, and on this one, though the lecturer was evidently against the system of specifying specialists' work, as being in his view unfair to the builder, he did not clearly explain why this method of working is objectionable in the broader aspects of the case.

He says it deprives the contractor of "his right of bargaining and dealing with a known firm, and that disputes might arise as to the presence of other workmen than his own." Now, I fail to see the hardship of the case as against the builder, provided it is stipulated in the contract and specification that So-and-So shall, for example, do the steel construction and concrete

or fireproof work (so-called) at a net sum of so much, which is to be subject to no discount whatever, but that the builder shall provide water and use of his scaffold, so far as it applies, and that he must in his estimate allow for this, as well as add his own profit on the specialist's work.

If he fails to put down any profit, and so obtains the job unfairly as against other firms, that is his own look-out, and surely Mr. Blashill's sympathy is wrongly placed.

The architect who wishes to do justice to his clients obtains estimates beforehand from certain well-known firms for such things as steel constructive work, and the concrete or other fillings. He then selects the most suitable and most advantageous offer, in order to insure which, he tells the competing firms: "I want a net price, subject to no rebate at all." He cannot run the risk of allowing a general contractor to sublet the work, as he certainly will do if it is thrown in as the builder's right to bargain over, and get taken at the lowest possible figure. This undoubtedly would take place, especially among contractors who go in for open tendering on advertisements, such as public bodies are compelled by law to issue. The architect who is worthy of his position is quite as desirous of seeing justice done to the builder as to his clients, and he knows that the wisest plan of working, quite apart from the morality of the question, is to let the builder know that while he will stand no humbug, it is his intention to deal fairly with the builder, come what may. What I looked in vain for in Mr. Blashill's paper is the way—or the suggestion of a way—which he has to propose as to how an architect can insure, in the ordinary everyday manner of dealing, a more satisfactory result than the method which I have described, and which he says is fraught with difficulties, and open to so many objections.

The builder who knows beforehand that a certain firm is to do certain work should either decline to tender under such conditions, or, if he agrees to tender, he ought to put down his 10 per cent., or whatever profit he thinks suitable, and then loyally carry out his bargain. Instead of this, in many instances he sets to work to create difficulties; refuses to give orders to the sub-contractors, and in a variety of ways makes the architect "pay" for the care he has taken in the interest of his employers—makes the architect pay for his forethought by giving that individual all the trouble and bother he can—the object being to gain extras, if possible, and, if not, to make the architect determine to give up this practice of obtaining tenders beforehand.

Mr. Blashill seems to me to side unduly with the builders in the manner in which he has stated the case. Of course, if the architect has to depend on the specialist for the design of the iron construction, and accepts any weights and scantlings which the specialist chooses to show, then the client has to pay more than possibly he ought for such construction; but it is no remedy to allow the general building contractor to hunt up the cheapest possible way of doing the work and use the slightest possible scantlings.

If a fully detailed specification and drawings are prepared for the steel construction, the ordinary builder only does what the architect has already done; he gets in prices, and that, be it noted, in the interests of his employers, whereas the builder's interest mainly will be directed towards his own gain. Looking the matter fairly and squarely in the face, will Mr. Blashill tell us how the architect ought to meet the problem to the best advantage of all concerned? He has stated a difficulty we all feel—he appears to lean towards one side a trifle too much; but he leaves the problem unsolved, adding only the warning as to the advisability of minimising the specialist's work as much as possible. What about plumber's work? In the best jobs specialists are employed. What about electric lighting, heating, terracotta work, metal casements, leaded glazings and coloured-glass work, mosaic and wood-block floorings? These and other things an architect is bound to go into, obtain prices for, and insert net sum. If not, why not, and in what way can better results be obtained? Mr. Blashill has had a unique experience. He has no object to serve save the right one—to give us the advantage of his knowledge. At present he has left us in the dark.—I am, &c., A FELLOW OF THE R.I.B.A.

Messrs. E. H. Shorland and Brother, of Manchester, have just supplied their patent Manchester grates to the Pathhead Public Schools, Fifeshire.

Intercommunication.

QUESTIONS.

[11692.] **Car Stone.**—Will some reader please give particulars of Car stone, which is, I understand, peculiar to the county of Norfolk? What is the nature of the gritstone or flint? How is it worked and used, rubble or squared work?—and probable cost per foot cube, or super. H. J.

[11693.] **Lettering of Roof Diagrams.** Will some student versed in graphic statics inform me which is the best and simplest mode of lettering the spaces between the forces to prevent confusion, and also the reciprocal diagram? The system known as the "Bow" notation is said to be the best. What is this?—S. J. C.

[11694.] **Bedding Trusses.** Is it usual to place any bedding material under the eastern bedding plates of roof trusses? If so, what is the best material to use, and should the bedding plates go through it? I am not sure whether some asphalted material or lead is best.—A. L.

[11695.] **Architect's Authority to Order.**—If in the progress of a building it is deemed advisable to order any alteration in the design that will not seriously affect the result, is the architect in a position to do so without consulting the owner?—T. W. K.

REPLIES.

[11677.] **Stone for Window-Sills.**—As under this heading work and material in the United States have been several times referred to, the following may be of passing interest. The extracts are from a letter written by Mr. Oliver Burdett, of New York city, a former pupil, and for many years a valued member of my own staff. For the last sixteen or seventeen years he has been resident at New York, where, through much natural ability and unwearied perseverance, he has risen to a deservedly good and prominent position. Writing under date of Feb. 17, he says: "The harbour and Hudson river are still packed with ice, stopping all ferry-boats, to the intense daily inconvenience of tens of thousands of people. The winter up till the present month has been exceptionally mild, but now it has come in uncommonly severe. Ma-masonry and carved work have gone through a great change during the last few years in this country generally, and more especially in New York. The prevailing styles undoubtedly are now those of Louis XIV. and XV. This, of course, has been persistently introduced everywhere by the younger school of architects, most of whom have been students—more or less—in the Ecole des Beaux Arts at Paris. They take unwearied and deep interest in the production of chaste detail, both as regards mouldings and ornamentation. All the latter is carefully modelled, and the effect of such models, as a rule, are considered *in situ* before the work is actually done. In the residential portions of the city the old brown stone houses—once a wealthy American's ideal home—are fast fading away. They are being systematically pulled down, and upon their sites costly modern residences are being erected, chiefly in Indiana limestone, but very many of white marble, whilst there are also a good sprinkling of them constructed wholly of granite. The new Custom House and the Hall of Records are both fine public buildings, now in course of erection. Each will cost something over £1,000,000 to put up. The amount of the granite contract alone upon the latter structure is something like £400,000. This granite is all worked at the quarries, almost entirely by Italian workmen. "Skyscrapers" have not yet run their final race in regard to height. A huge hotel is now building here, a monstrosity that will eclipse in altitude any other habitation in the whole world. It will consist of eighteen lofty stories, and these will contain over 2,000 bedrooms. Machinery surely and steadily, is making great inroads into the stone trade of New York. That honest craftsman, the poor stonecutter, is now practically a thing of the past. He is scarcely wanted at all. All he is now required to do is, ever and again, to 'set-in' a mould for the machine to work, or here and there to re-turn a moulding. To masons the present state of things distinctly means starvation, and ultimate annihilation altogether. There are considerably over 1,200 stone-masons in their own trade union here in New York, but there are not 300 of these in employment. This is not the effect of dull times—practically trade was never busier—but entirely owing to the vast amount of work the labour-saving machinery turns out. Taking the stonework at present in hand in New York City alone, if there were no machinery, work would at once be found for from six to seven thousand stone-masons. By the English papers we see that Americans are making great inroads into the English markets, especially as regards the construction and erection of metal bridges; and at home people are wondering, with labour so much dearer on this side than on yours, how this can be possible. The real secret is the great centralisation of capital in the way of trusts. These have cheapened the production of almost everything. Then the American is trained to produce far more for what is called a fair day's work than he does in England or in Continental countries. I remember when I was in your employ what bright and happy days to look back upon! I used to think I had to work hard; but if I had those times over again, I should call it a mere snap. An American workman certainly produces, day by day, as much again as an English one contrives to turn out in London. When next you pay us one of your flying visits, I hope to have the pleasure of conducting you through a typical up-to-date American stone factory. I know you will be astonished at the system, and how things are managed. Manual labour is practically not in it."—Hopton-Wood as "G. H. G." very correctly remarks, is an excellent weather stone; but one must think twice before recommending Purbeck or Swanage stone for exposed places. I remember a severe and serious practical lesson learnt in regard to stone quarried from those localities occurring in or about 1874. We were engaged upon a very large new mansion, church, schools, &c., a group of buildings practically embracing a whole parish, and situated upon the extreme south-east corner of this county, overlooking the English Channel, and close by the picturesque and celebrated landscape that has ever taken

place in England. The place is called Rousdon, and was at that time in course of erection from the designs of Messrs. Ernest George and Vaughan (the latter—of whom I entertain very pleasant recollections as being one of the best of good men—has, alas! joined the great majority fully a quarter of a century ago). The dressings were, in the main, of Purbeck stone. The locality was much exposed to sea-fogs, and once, after a lengthened experience of that sort of thing a severe frost set in with the ultimate result that the stone "burst" and "flew" everywhere. The damage done in a single night must have amounted to over a thousand pounds. What our excellent all-round correspondent "W. E. M." writes rather makes one cry for more. Practical men do not care to jump at anonymous statements. The latter are only of value when names and places are vouchsafed. "W. E. M." alludes to "the leading authority in building stones in the United States," but by carefully hiding the name of the reputed "leading authority" nullifies the weight of his reference. Cynical readers might be inclined to suppose it may possibly be simply a thinly-veiled personal reference. He goes off at a tangent, too, when referring to the price paid by sculptors in the United States for selected statuary marble from Carrara. No prior reference has been made to that variety of marble. Further, he must be in error in assuming really good statuary can be usually purchased at so low a figure as from 12s. to 18s. per foot cube! I know I have had to pay a great deal more for it. But the subject at issue is not marble such as sculptors use, but the ordinary kinds in demand in some parts of America for window-sills, doorsteps, and that particular class of ordinary masonry. I remarked in some former notes (Feb. 22) that "America produces an immense variety of beautiful marbles, to say nothing of its lovely onyx." "W. E. M." whilst apparently questioning this remark relative to onyx, unconsciously confirms it by writing he knows none "at all equal to the Travertine (onyx) brought from Tecalli, in the State of Puebla, Mexico." If "W. E. M." resides in town, and will utilise his Saturday afternoon holiday by taking a stroll through the galleries of the British Museum, he will quickly discover where my authority is obtained for asserting there is nothing to surpass terracotta for lasting qualities. Surely "W. E. M." is mistaken in supposing any man of experience would polish Carrara marble intended for such outdoor purposes as window-sills! Therefore, whether it comes out when so treated with "a waxy, semi-transparent surface" (fine words are a trifle delusive at times!) "or the dead-white of Vermont marble, matters very little." "W. E. M." says: "Onyx is not used for decorative purposes in any building." Surely he has seen the beautiful font of that material in the late Mr. Sedding's church at the bottom of Sloane-street, S.W.! A hundred other instances of the use of onyx for decorative purposes might be quoted. Is this incorrect information based on statements made by "the leading authority in the United States," who—second-cousin to George Washington!—"has never yet been contradicted"?—HARRY HENS.

[11677.] **Stone for Window-Sills.**—Purbeck or Swanage stone tooled will not be cheaper than Portland. Killer's Hopton Wood stone is carboniferous limestone, and the labour on it would be as great as that on Portland; moreover, it is an encrusted marble—in fact, it furnishes the Derbyshire marble. No artificial stone made with a Portland cement matrix is impermeable to moisture. I repeat that a cheaper stone than Portland—and one that will do nearly as well—is Box Weather stone.—W. E. M.

[11684.] **Bonding Stone Column to Brick-work.**—"Young Architect" cannot bond columns in short lengths to brickwork by dowels or ties at intervals. He can cramp column in short lengths to blocks of stone built into the brickwork. These blocks will form a good anchorage ground. To explain this thoroughly we should know the size of the columns and the thickness of the walls to which they are to be bonded. The word "dowel" is usually meant to apply to a vertical pin of gunmetal or slate—such as would be used in setting a mullion on a window-sill. And "cramp" applies to a horizontal tie of same material, used to connect the stones of a cornice or coping.—W. E. M.

[11685.] **Cement.**—I have looked at Kelly's "Merchants, Makers, Importers, &c." of Trades. See nothing as to Nova Scotia; but in New Brunswick, St. John, there are several building material and oilmen dealers; latter in England often keep cements.—REGENT'S PARK.

[11685.] **Cement.**—Ordinary plaster of Paris is gypsum (hydrated calcium sulphate, $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$), ground to powder, and its combined water partly driven off by exposing it to a temperature a little under that of boiling water, 212° Fahr. This powder, when mixed with water, sets as a soft, friable mass. Hence many attempts have been made to impart hardness to it for builders' work. The commonest method is to soak the calcined lumps of plaster in a solution of alum (aluminium sulphate, $\text{Al}_2\text{SO}_4 \cdot 9\text{H}_2\text{O}$). These, when burnt again, and ground, yield a plaster which sets hard enough to take a good polish. The same result may be obtained by steeping raw gypsum in a 10 per cent. solution of sulphuric acid (hydrogen sulphate H_2SO_4), and then firing to a dull red heat. Keene's cement is made by soaking calcium gypsum in a solution of borax (sodium boric acid, $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$) and cream of tartar (sodium tartarate $\text{Na}_2\text{C}_4\text{H}_4\text{O}_6$); borax alone has almost the same effect. In Martin's cement potassium carbonate (K_2CO_3) is used, instead of borax or alum; but all such additions are made with the object of hardening the plaster when set. Wherever gypsum is found plaster of Paris may be made.—W. E. M.

[11685.] **Cement.**—Keene's: Made by steeping the calcined stone in a strong solution of borax and cream of tartar (1 borax, 1 cream of tartar) dissolved in 18 water; allowed to remain until thoroughly impregnated with the salt. Then taken out, dried, and reburnt at temperature of dull redness for six or eight hours. When cool, ground to powder. Borax alone gives equally good results. The more concentrated the solution into which plaster is introduced, the slower the set. Thus, if to 1 of saturated solution of borax be added 12 of water, and employ this liquid as bath, set will take place in about 15 minutes. If only 8 of water, then the cement will take one hour at least to set; and if only 4 of water, then several hours

elapse ere setting. Martin's cement: Solution is carbonate of potash, stages very similar. Longman's "Notes," part 3, on Materials, gives Keene's as made in two qualities—coarse and superfine; former is white, capable of high polish; latter not so white, or able to take so good a polish, but sets hard. Sold in casks of 3½ bushels. Martin's in three qualities—coarse, fine, and superfine, coarser being reddish white colour, and finer pure white. Is said to cover more surface in proportion to its bulk than any other similar material. Of course neither well adapted for situations much exposed to weather on account of their solubility, cost, and moderate strength under favourable circumstances renders them unsuited to engineering work. Have come across cement importers and building materials dealers, &c., at St. John, N.B., suitable, very. A. Christie, 245, City-road; Haley Bros. and Co., 1, Broad; Mabie, 212, Main; J. W. Smith, 6, Ward; Stetson, Cutler, and Co., Pollock-road; J. M. Taylor, 8, Nelson; W. H. Thorne, 41, Prince William—the above are building materials. Lime, plaster, cement: C. Miller, A. Mills, 11, Union; J. W. Smith, 6, Ward; J. M. Taylor, 8 Nelson—all of St. John. Cement importers, Toronto: C. D. Morris, 111, Yonge; National Co., ditto; Ontario Association, 118, Esplanade; Rathbun Co., 310, Front-street. Louisbourg, Cape Breton: A. Baker, &c., storekeeper. Halifax: Dominion Colour Co., Henderson and Potts—may stock like colourmen in England. Plaster makers: Alabastine Co., Paris, Canada. Ottawa, Canada: Granite Co., 34, Court; E. G. Laverdure, 71, William; D. O'Connor, 298, Bank; Wright and Co., 43, Besseler. If any difficulties arise of getting, all can be had through such a firm as Eastwood and Co., 47, Belvedere-road, London, S.E., who stock bricks, cements, limes to the largest extent probably of any firm in the world.—REGENT'S PARK.

[11687.] **Hornbeam.**—"Regent's Park" says that this tree has no sapwood or alburnum. Will he kindly say if he knows of any exogenous tree with a stem or trunk of duramen or heartwood only? And if so, how the crude sap is conveyed from the rootlets to the chlorophyll cells of the leaves?—W. E. M.

[11689.] **West Walton.**—The parish church is one of the finest in Norfolk. Ten days may well be spent in measuring and sketching the stonework alone. There is some splendid typical conventional Early English carving in the capitals of the south doorway. "Student" should take his camera.—W. E. M.

[11690.] **Tombstone.**—Selected Pennant from the Bristol district. It is a Middle Coal Measure stone.—W. E. M.

[11690.] **Tombstone.**—If "Memorial" will place himself in communication with us, we shall be glad to give information with reference to durable stone for recumbent tomb.—EMLEY AND SONS, LTD., Newcastle-on-Tyne.

[11690.] **Tombstone.**—Probably the best standing material to use for a recumbent monument of simple design, to be erected in Wiltshire, is finely axed (not polished) grey Dartmoor granite; or Irish limestone (Ballinasloe by preference) is equally good.—HARRY HENS.

[11691.] **Diaphanities.**—If think of glass decoration, like painted glass, am not quite sure where at present. Some time back near N. end of Gray's Inn-road or west side there was a trader therein, but where gone to do not know. However, perhaps inquiry in Charing Cross-road from about 100 to 130 on west side might help.—REGENT'S PARK.

Before the members of the British Institute of Certified Carpenters Mr. W. H. Bstambean read a paper, on Saturday evening at Carpenters' Hall, on "Wood Beams: their Properties and Design." Professor R. Elsey Smith, F.R.I.B.A., vice-president, occupied the chair.

The memorial-stone of a new infants' school to be erected in connection with All Saints', Bothen, Stoke-on-Trent, was laid last week, by the Bishop of Lichfield. The new school is to be built of red brick, on a site lying between the present schools and the church. It will consist of one large central hall and two classrooms, and will provide accommodation for 250 children. The estimated cost is about £1,000.

The Scarborough Burial Board have adopted, after a competition, plans by Mr. F. A. Tugwell for the erection of a chapel, gatekeeper's lodge, and other buildings in the new cemetery.

The Tredegar Urban District Council have retained the services of Messrs. Beasley, Son, and Nichols, of 11, Victoria-street, Westminster, in connection with the sewerage and sewage disposal of the town.

Mr. Richard Carruthers Ivy, surveyor to the Ormskirk Urban District Council, died at his residence, St. Helen's-road, Ormskirk, on Friday, after a short illness, at the early age of forty years. He had filled the office of surveyor for twelve years, coming from the Southport Corporation offices.

The Birkenhead guardians, at their meeting on Tuesday, sanctioned the erection of a new boardroom and offices for the union, at a cost of £21,000, on a site purchased in Conway-street, Argyle-street, and Oliver-street for the purpose.

Senor Juan Facundo Riano has died in Madrid at the age of 72. He was one of the most competent authorities on the fine arts, and was Professor of Art in the School of Diplomacy. Senor Riano was intrusted by the authorities of South Kensington Museum with the preparation of a catalogue of the Spanish collections and a volume relating to industrial art in Spain. Senor Riano married the daughter of a former assistant at the British Museum.

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ST. STEPHEN'S CATHEDRAL, VIENNA.—SOANE MEDALLION DESIGN FOR A CLUBHOUSE IN A LARGE CITY.—BOURNEMOUTH SCHOOLS.—RED LION HOTEL, PEN-Y-GROES.—NEW PREMISES, NEWCASTLE-ON-TYNE.—SOME ENGLISH FURNITURE EXHIBITS FROM THE PARIS EXHIBITION.—TORONTO BIBLE TRAINING SCHOOL.

Our Illustrations.

ST. STEPHEN'S CATHEDRAL, VIENNA.

THIS etching, by Mr. A. Wallace Rimington, R.P.E., is reproduced by permission of the Fine Art Society, and it gives an interesting interior of that building; but the artist has not favoured us with any particulars in time for this week.

SOANE MEDALLION DESIGN FOR A CLUBHOUSE.

WE published Mr. Mathew J. Dawson's design, with plans, elevations, and view, on February 15 last, when we gave some particulars of his work, for which he gained the first prize. To-day we print a reproduction of his detail of the main entrance.

BOURNEMOUTH SCHOOLS.

THIS school has been built at a cost of £9,000 by funds provided by the Bournemouth Corporation aided by a grant from the County Council of Hampshire. It is a secondary school and has accommodation for technical subjects, the minor school being a municipal feature. The building is executed in Milton red-faced brick, with Portland stone dressings, and covered with dun Broseley tiles. The work has been carried out by Messrs George and Harding, contractors, of Bournemouth, from the designs and under the supervision of Messrs. Crake, Gifford, and Oakley, also of Bournemouth.

RED LION HOTEL, PEN-Y-GROES, NORTH WALES.

THIS hotel, which has just been built, is from the designs of Mr. Richard Hall, architect, Bangor, N.W. The building is faced with Ruabon red bricks with terracotta dressings. The roofs are covered with green slates. The builder is Mr. William Parry, of Bangor.

BUSINESS PREMISES, NEWCASTLE-ON-TYNE.

THESE two blocks of commercial buildings, both faced with ashlar, have been erected at Newcastle-on-Tyne, from the designs of Messrs. Marshall and Tweedy, architects.

SOME ENGLISH FURNITURE EXHIBITS FROM THE RECENT PARIS EXHIBITION.

THESE examples, drawn from photographs, are typical of some of the more up-to-date types of English furniture, based, at least, to some extent, upon the "Arts and Crafts Exhibition" work. The Bath Cabinet Making Company's China Cabinet displays more originality, and having glazed doors at differing angles round its bay-like form, is thoroughly well lighted for the display of works of art. Mr. Henry's work is light in construction, aiming at elegance and practical utility. The Mahogany Table is certainly curious, and rather strained in effect. The American Architect also gave, in its opening number for the new year, a series of illustrations of French and

German furniture exhibited at Paris, and, as might be expected, some very extravagant designs are included among the specimens thus represented. The Austrian work is particularly fantastic and strange. Imitators of this class of work in London have been credited with some originality, but their ideas are often only second-hand.

ROYAL ACADEMY EXHIBITION, 1901.

THE one day on which architectural drawings may be sent in this year is Friday, March 29, and these must be delivered by a personal agent to Burlington House, and no works in cases will be received. On Saturday, March 30, and on Monday, April 1, oil paintings are to be sent in; Tuesday, April 2, is reserved for Sculpture. The necessary forms and labels can be procured during the month of March only from the Academy on receipt of a stamped and directed envelope. Only gilt frames are admissible for architectural drawings.

We shall be glad if our readers who intend to submit works will send their drawings to us to be photographed before they are forwarded to the Exhibition, so that our reproductions of accepted works may be included in our series of Academy illustrations, which will be published after the galleries open, as in former years. We will receive and deliver works for our contributors; but the labels, &c., as above, must be sent complete with the framed drawings ready for despatch to the Exhibition.

PROFESSIONAL AND TRADE SOCIETIES.

DEVON AND EXETER ARCHITECTURAL SOCIETY.

—At the Athenæum, Exeter, on Thursday evening in last week, Mr. Charles Cole gave a lecture to the members of the Devon and Exeter Architectural Society, Mr. C. J. Tait, president, being in the chair. The lecturer took his audience from Harwich to the Hook of Holland, thence via Rotterdam, Nymingen and Cranigen, and so on to Cologne; from thence in the Rhine Valley to Remagen, describing the scenery and the construction of houses in course of erection, remarking on the low platforms at most of the railway stations. Slides were shown illustrating the above as well as the old church with a Romanesque nave and Gothic choir; also a 12th-century archway with grotesque sculptures, and the new Gothic four-towered Apollinaris Kirche. From Remagen visits were paid to Coblenz and the fortresses of Ehrenbreitstein. At Cologne the well-known bridge of boats and Cologne Cathedral were described, as well as many of the chief places of interest in the city. A trip up the valley of the Ahr, with sketches of the picturesque Bunte Kuh, and the villages of Ahrweiler, Marienthal, Dernach, Rech, to Altenahr, were shown on the screen, and the curious wayside shrines described. Visits to Bonn, Bophard, and Erpel concluded the address.

EDINBURGH ARCHITECTURAL SOCIETY.—A meeting of the Edinburgh Architectural Society was held on Feb. 27, Mr. A. F. Balfour Paul, president, in the chair. A lecture, entitled "Why we go to Italy," was given by Mr. Percy E. Nobbs, M.A., A.R.I.B.A. The paper took the form of an answer to the question why the student of art should go to Italy particularly, the general finding being that there the real beginnings of modern architecture were to be found, and that the decorative arts attained a marvellous degree of perfection in the splendour-loving days of the Renaissance.

EDINBURGH ARCHITECTURAL ASSOCIATION.—The members of this association journeyed to Glasgow on Saturday on a visit to the buildings of the International Exhibition. In the party were the president of the association, Mr. Henry F. Kerr, A.R.I.B.A., the vice-president, Mr. A. Hunter Crawford, and the secretary, Mr. W. M. Page. At the Exhibition they were joined by about twenty professional brethren of Glasgow. At Sandyford-street entrance to the Exhibition they were received by Mr. James Miller, the architect of the buildings, and under his guidance they studied with a lively interest the principal architectural features and the industrial hall, the machinery hall, the grand avenue and bridge leading between these two halls, the dome, with its mural decorations and modelled spandrels, the ceremonial entrance, and the piazza. They also viewed the prospect from the balcony which sur-

rounds the dome. Then they passed to contemplation of the typical styles of architecture shown in the Russian buildings, and of the steel and fibre construction of the grand concert-hall, visiting, by the way, the various other erections throughout the grounds.

SURVEYORS' INSTITUTION.—The annual dinner of this institution was held on Monday at the Holborn Restaurant. Mr. John Shaw (president) occupied the chair, and the company included Mr. T. M. Rickman and Mr. Daniel Watney (past presidents), Sir J. F. L. Rolleston, M.P., and Mr. Arthur Vernon (vice-presidents), Sir John Wolfe-Barry, Sir Alexander Binnie, Mr. J. F. F. Horner, Mr. C. J. Owens, Mr. Andrew Murray (city surveyor), Mr. A. E. de Bock Porter, C.B., Mr. H. T. Steward, Mr. J. L. Wilkinson, Mr. D. J. Ross, Mr. G. M. Freeman, K.C., Mr. R. Ellett (president of the Incorporated Law Society), Mr. T. Blashill, Mr. J. W. Penfold (hon. secretary), and Mr. J. C. Rogers (secretary). The chairman proposed "The Houses of Parliament." Sir J. F. L. Rolleston, M.P., who responded, mentioned the fact that he was the only surveyor with a seat in the House of Commons. Sir John Wolfe-Barry proposed "The Legal Profession." Mr. Freeman and Mr. Ellett responded. In giving the toast of the evening, "The Surveyors' Institution," Sir Alexander Binnie said that he looked on the institution with a great deal of pride and pleasure. Though a comparatively young organisation it was making rapid progress, owing, he felt sure, to the efforts which were being made to see that the profession should be kept up to the highest standard possible in an advancing age like the present. The chairman, in replying, said that when their first report was published in 1869 they had 200 members, and now they had between 3,000 and 4,000 members. Their museum had been rearranged, and they had a library containing about 8,000 volumes. After paying off the debt in connection with the new building, £31,167, a considerable balance remained in hand. Their benevolent fund had only been founded two years, but already they had invested funds to its credit amounting to upwards of £7,000. The institution was now firmly established, and he felt convinced that, if carried on in the same lines as in the past, it would continue to be of great benefit to surveyors, especially to the younger members of the profession.

CHIPS.

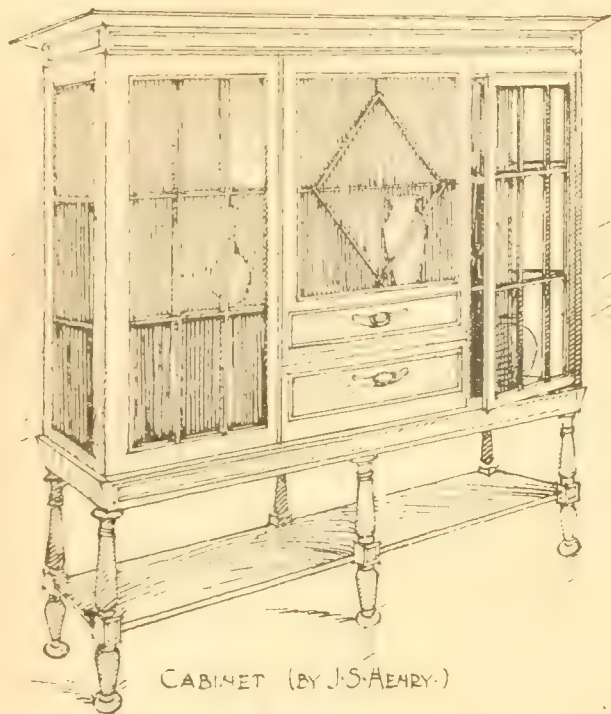
The London Brick Company, of Fietton, have secured the order for 25,000,000 bricks, to be used for the widening of the London and North-Western Railway from Euston Station to Willesden.

The foundation-stone of the Crabb Memorial Institute was laid in Victoria-road, Tunbridge Wells, last week. The building will include a large hall, with gallery, seating in all 350 persons, gymnasium, two reading-rooms, games-room, kitchen, &c. The walls will be of red brick, with dressings of stone. Messrs. H. H. and E. Cronk, of Tunbridge Wells, are the architects, and Messrs. J. Leney and Sons, of the same town, the builders.

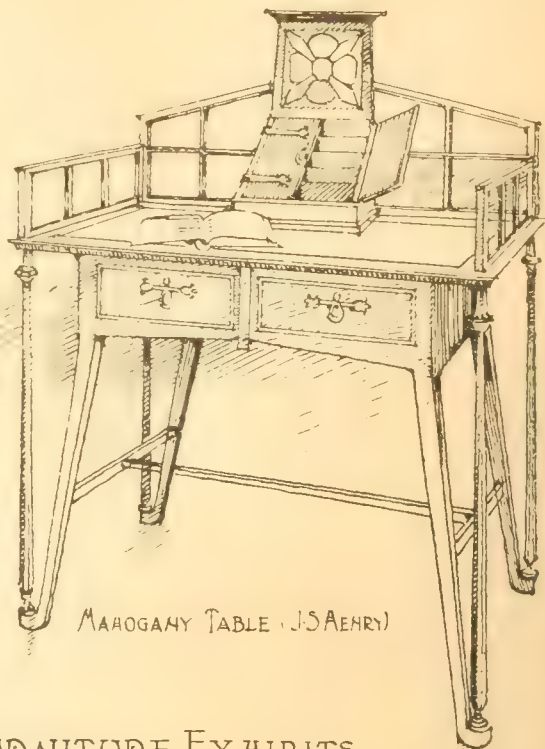
At the last meeting of the city council of Peterborough, a letter was read from Mr. A. McKewan, who received the premium of £25 in the recent abortive competition for altering the town-hall. The advertisement had stated that the architect of the selected plans would be intrusted with the work. But the scheme had since been abandoned, and Mr. McKewan thought he was entitled to some compensation. The council thought the case was one for compromise, and directed certain proposals to be made.

The Aberdeen School Board have approved of plans for the enlargement of the Central School, with the object of forming a higher-grade school and pupil teachers' centre. The estimated cost, exclusive of furnishings and heating, is £25,000.

Mr. A. A. G. Malet, Local Government Board inspector, held an inquiry at Middlesbrough on Friday with respect to the application of the corporation to borrow £23,963 for asylum extension purposes. There was no opposition to the application. The proposed loan was to cover the estimated cost of erecting six additional cottages for the staff employed at the asylum, and also the cost of the proposed extension of the asylum. The amount required for the asylum extension was £22,638, and for the staff cottages £1,325. The proposed extension comprises a block on either side of the existing buildings for 80 patients each, and quarters for four night nurses. The scheme was explained in detail by the architect, Mr. A. J. Wood, of 22, Surrey-street, Victoria Embankment, London.

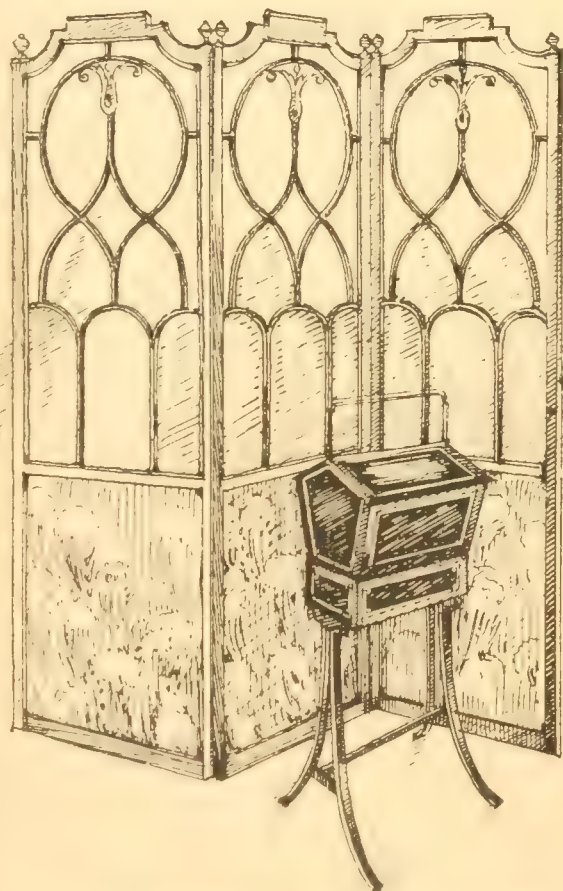


CABINET (BY J.S. AENRY)

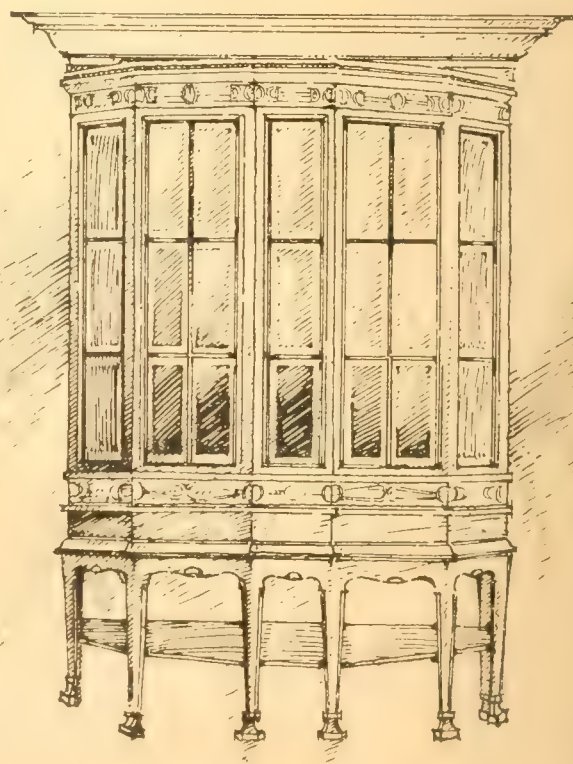


MAHOGANY TABLE (J.S. AENRY)

SOME ENGLISH FURNITURE EXHIBITS
AT THE RECENT PARIS EXPOSITION



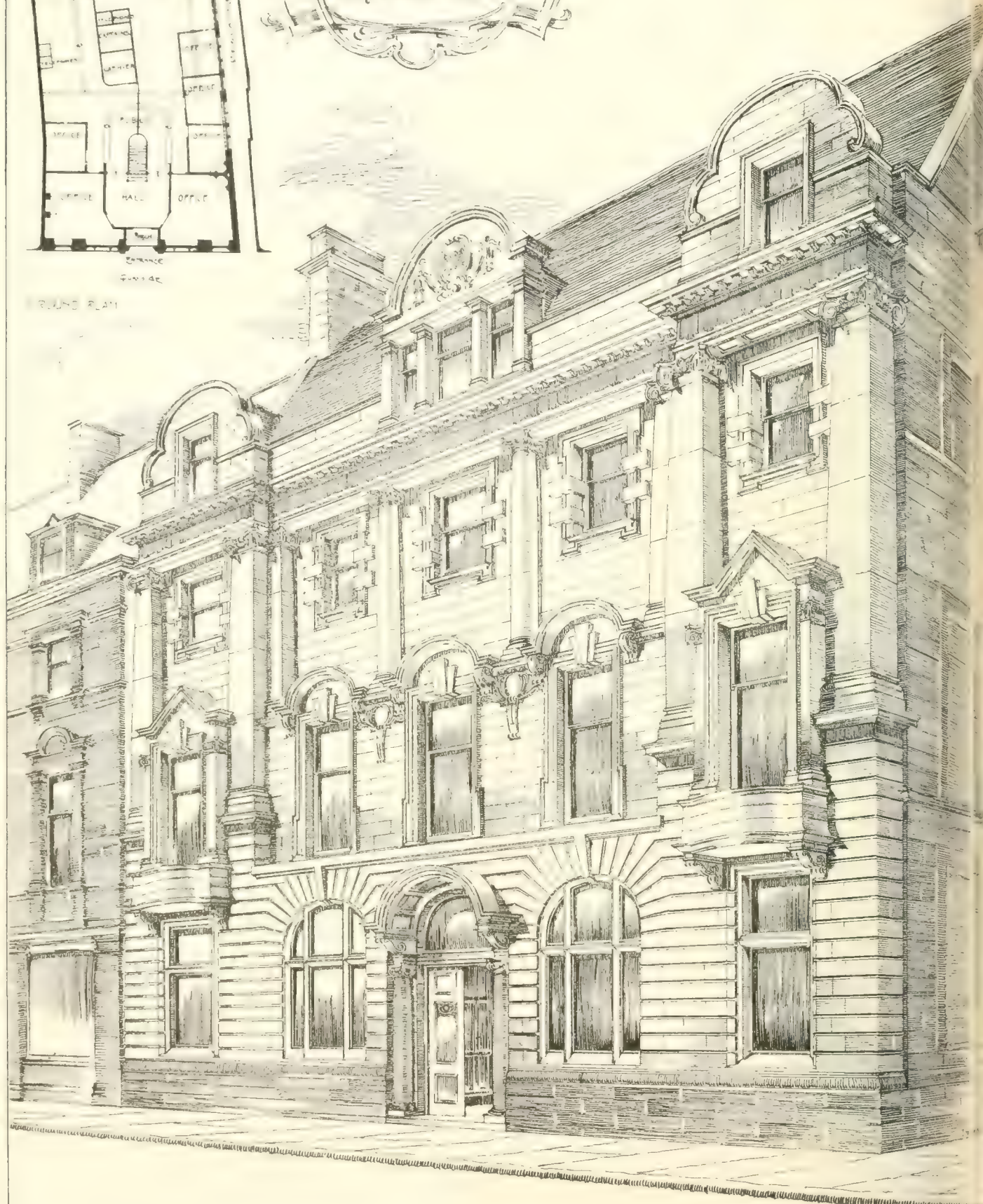
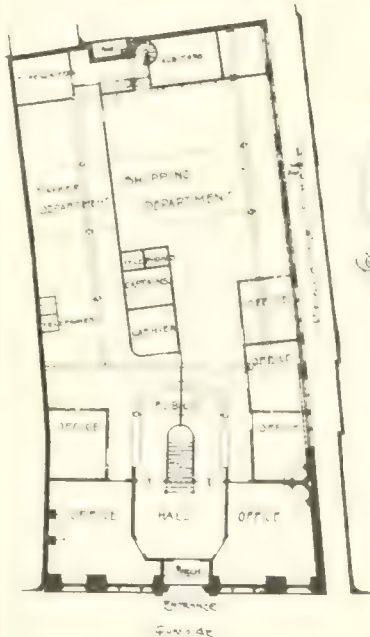
SCREEN AND MUSIC CASE - (J.S. AENRY)



CABINET BY THE BATA CABINET MAKING CO

W. W. W. & Co.

NEW OFFICES
QUAYSIDE
NEWCASTLE
For
Messrs PYM & BELL & CO



MARSHALL & TWEDDY
ARCHITECTS
NEWCASTLE on TYNE



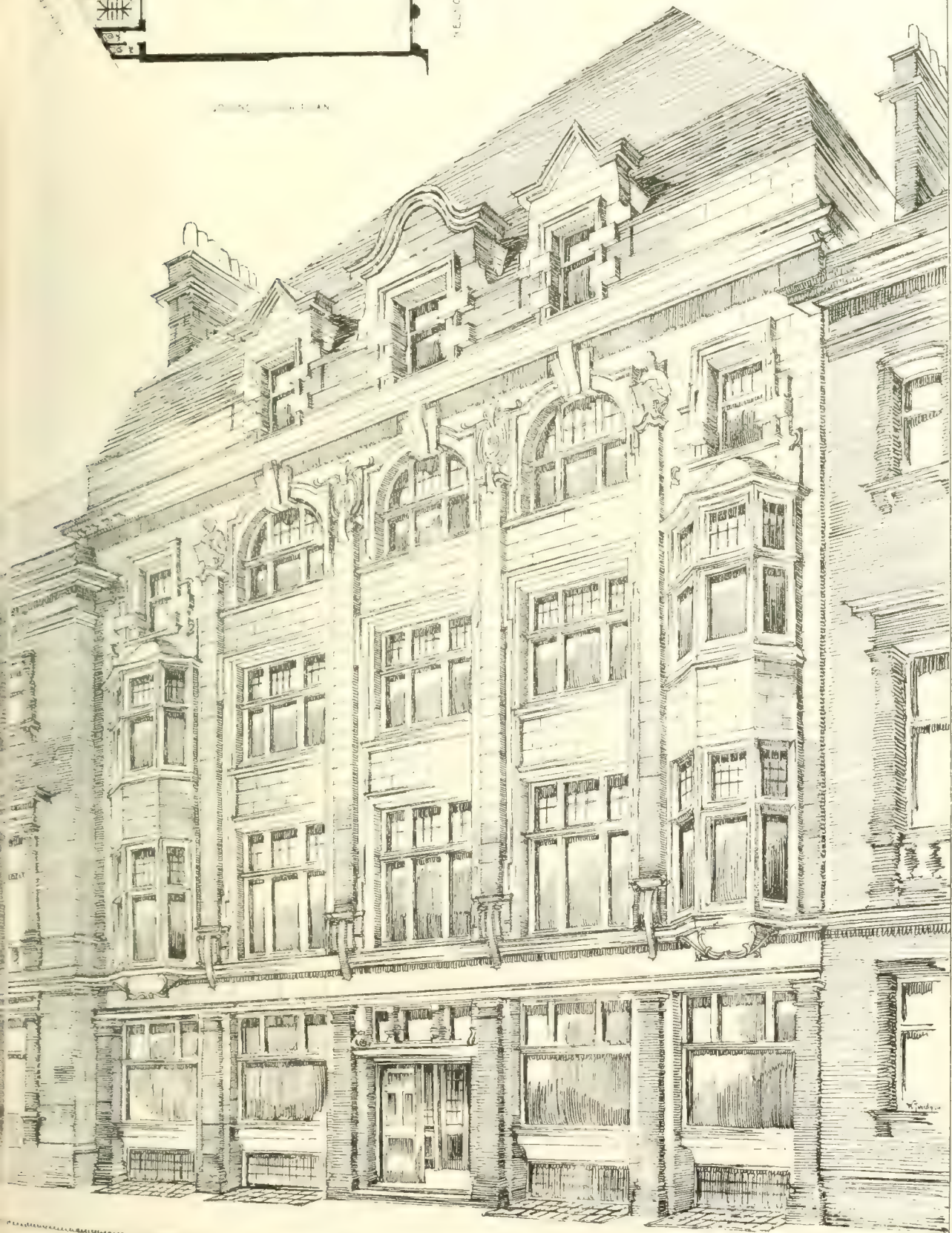
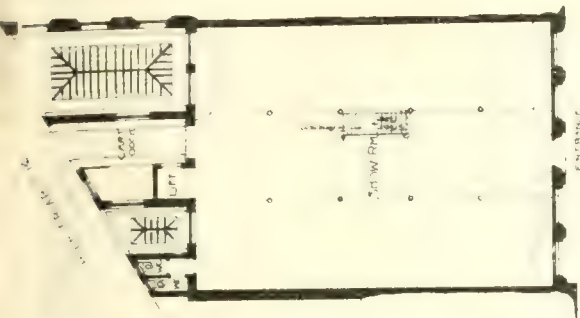
C. S. Safford & Co. Architects
Arch. 1007

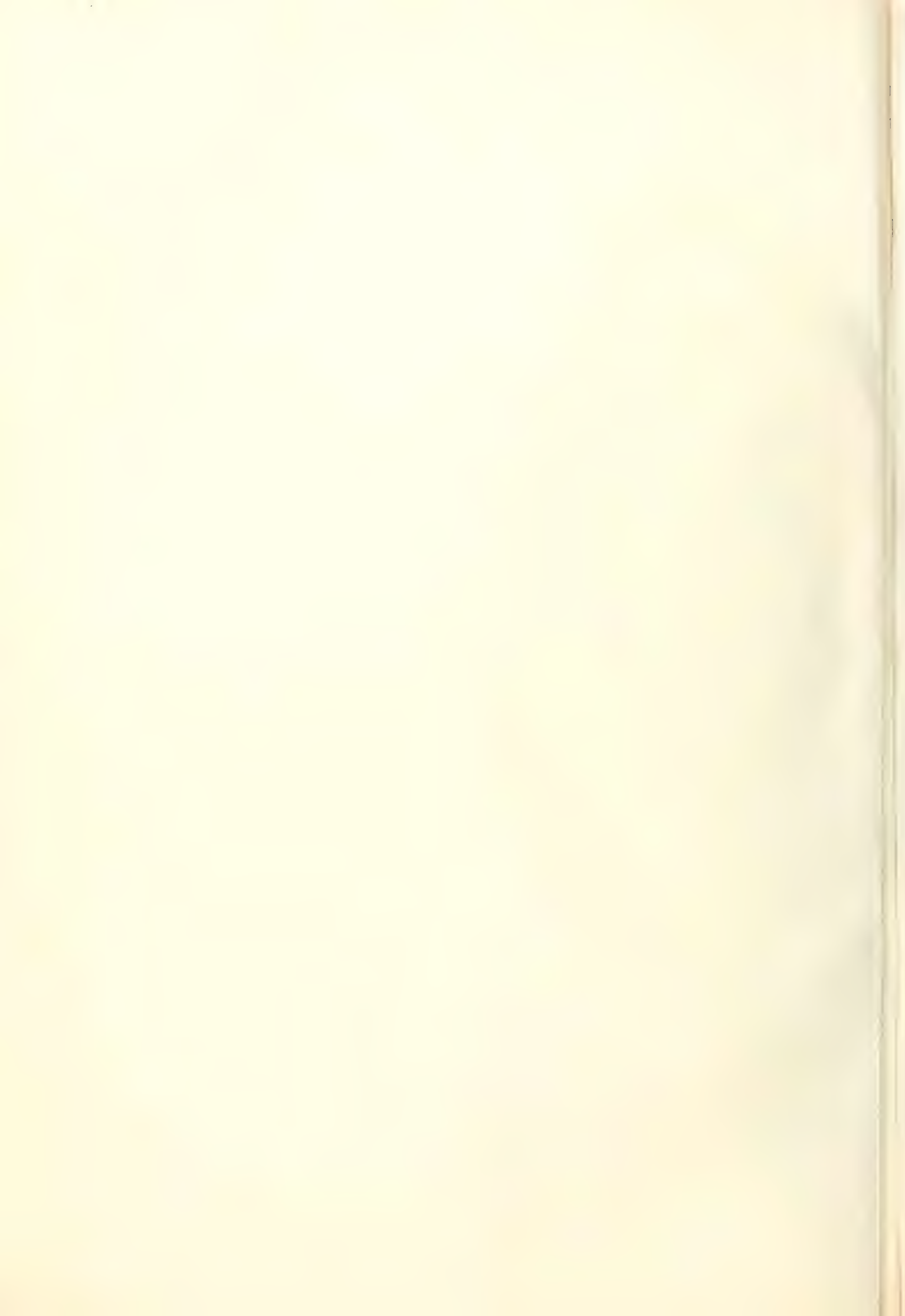


THE RED LION PEABODY STREET, NEW WALES, NEW SOUTH WALES

5/11/1880

NEW PRINCE OF WALES HOTEL BY MR ARTHUR & CO

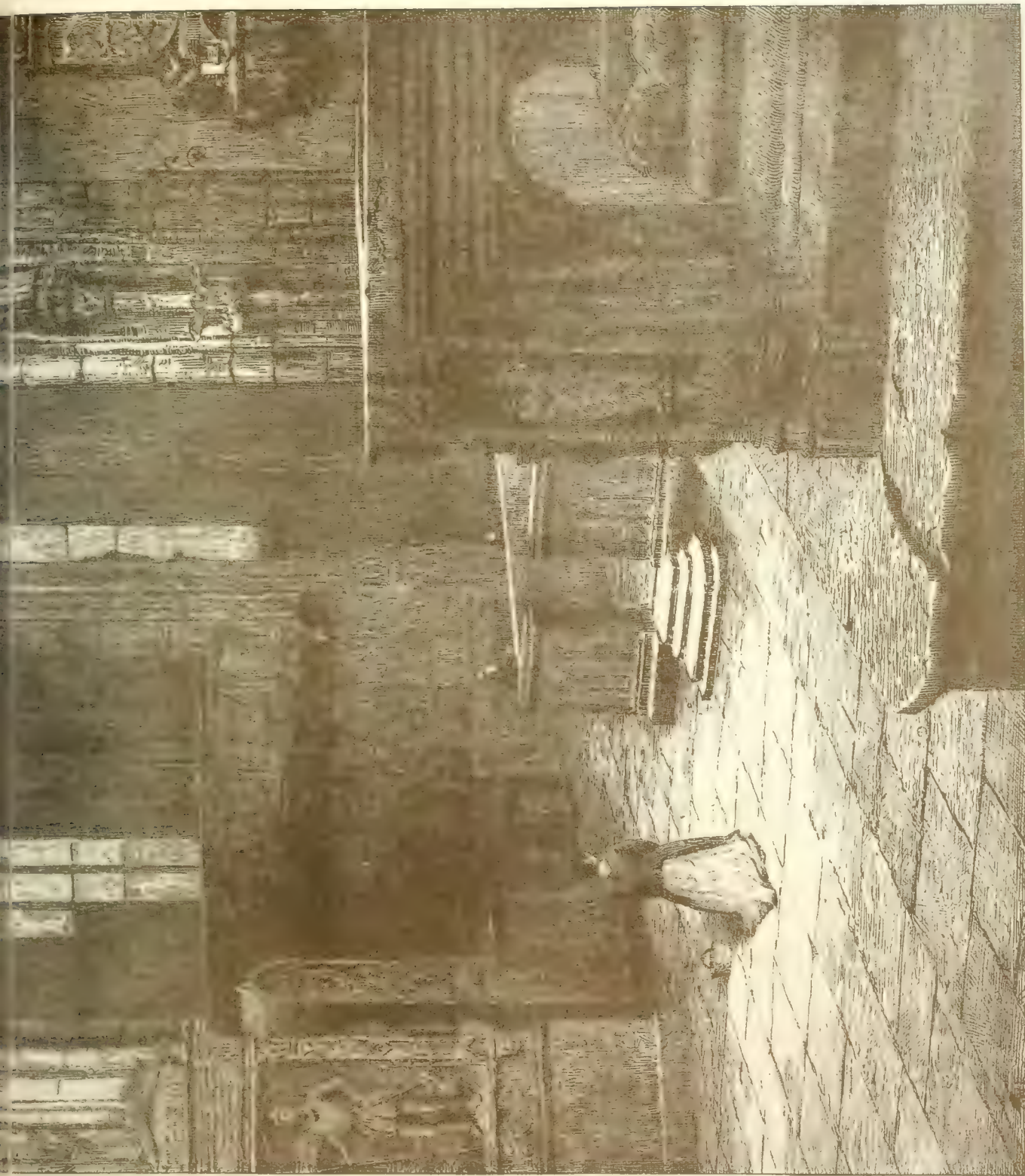






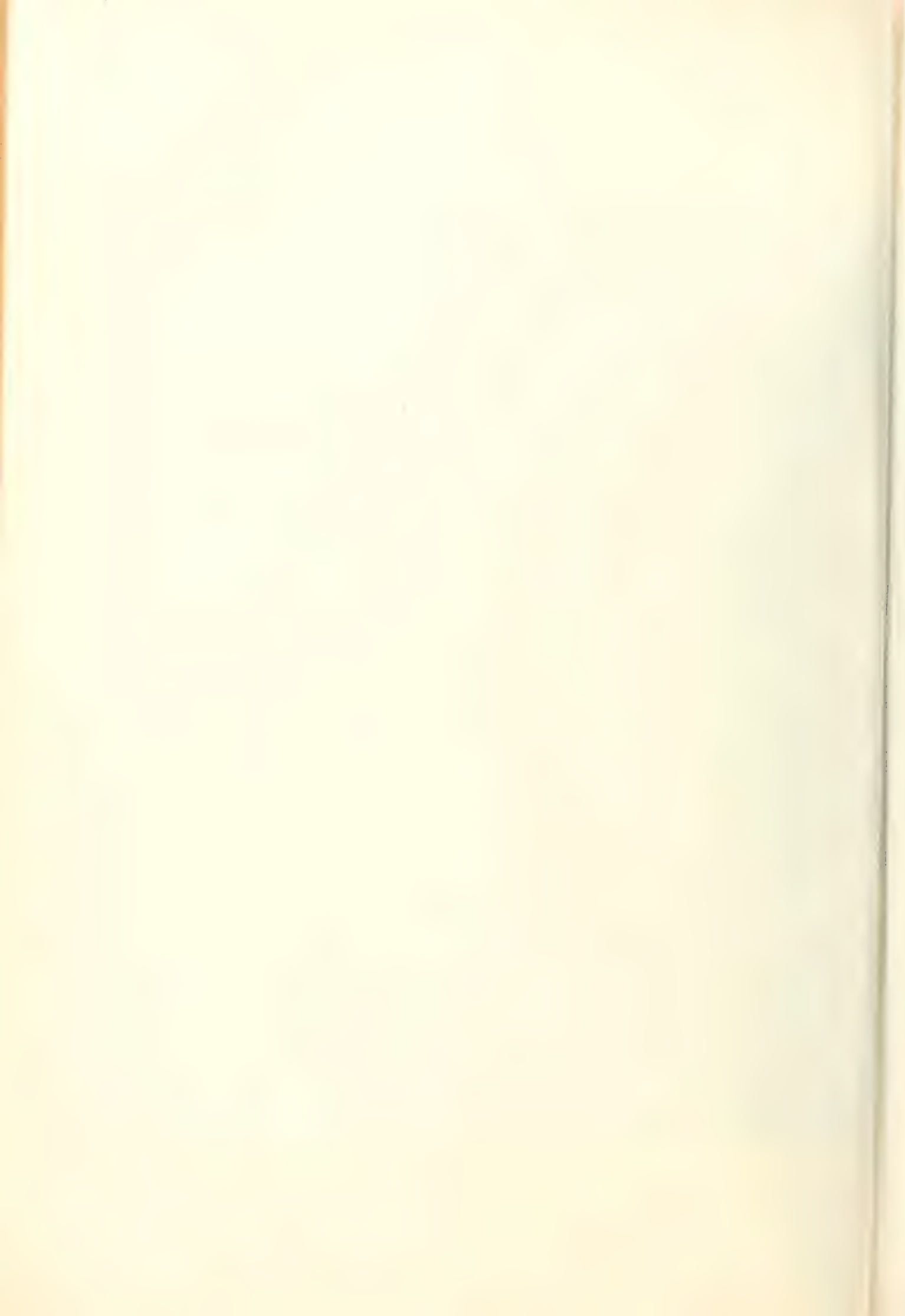
THE BUILDING PERSE MAR. 3, 1901.





• ST STEPHENS CATHEDRAL VIENNA • BY A WALLACE RIMINGTON • RPI

• BY PERMISSION OF THE FINE ART SOCIETY •



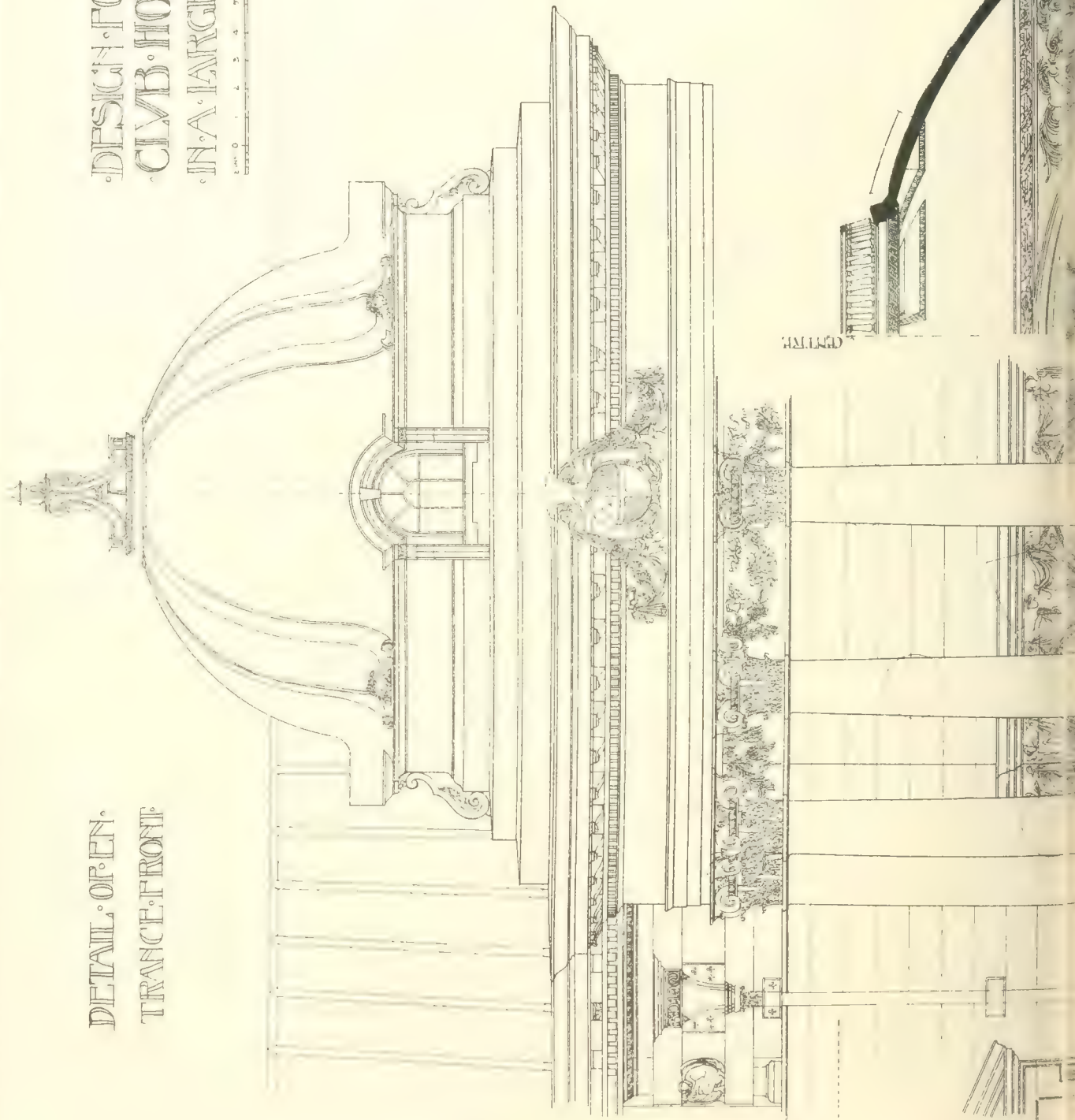


DETAIL OF EN-
TRANCE FRONT

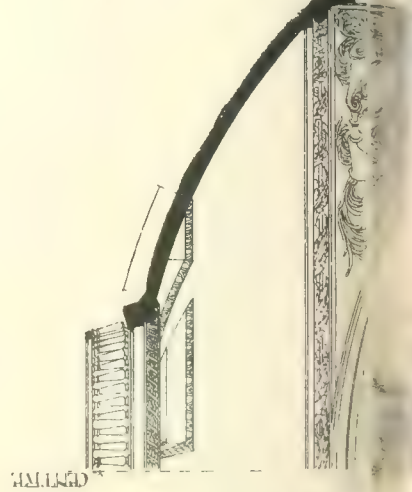
DESIGN FOR A
CLUB HOUSE
IN A LARGE CITY

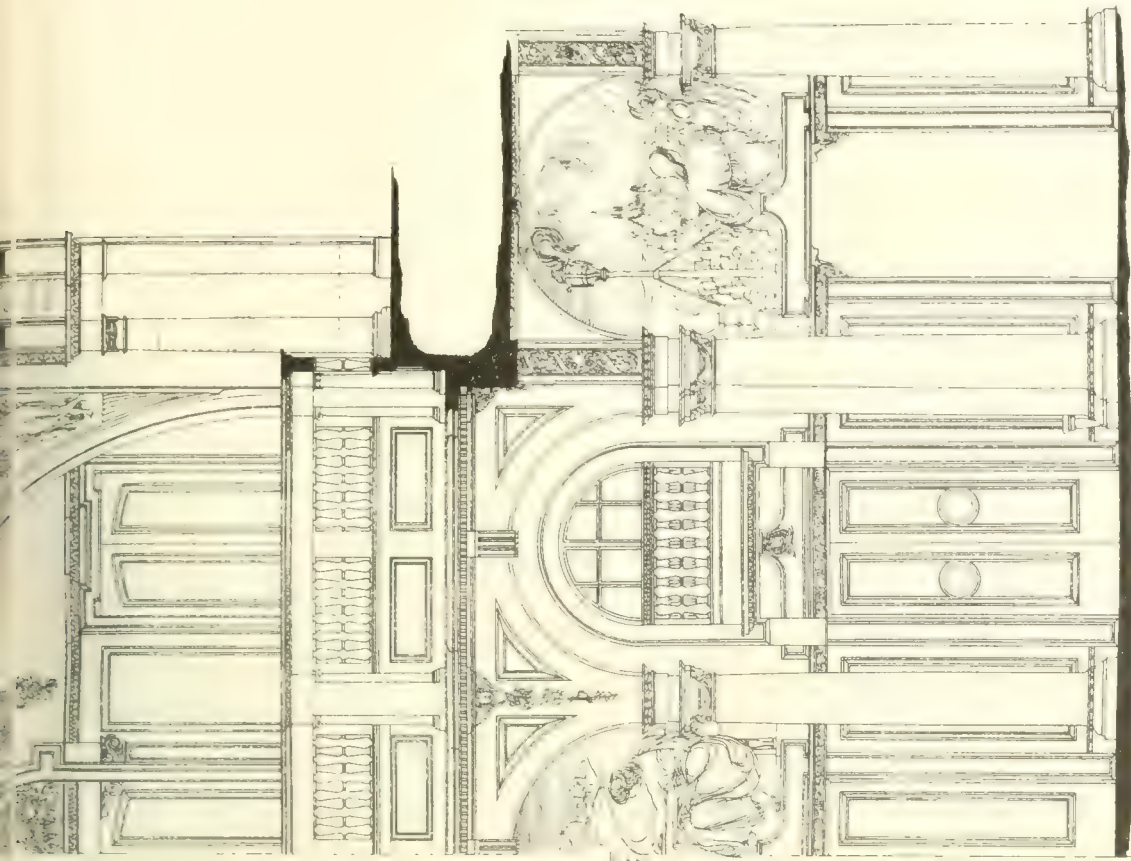
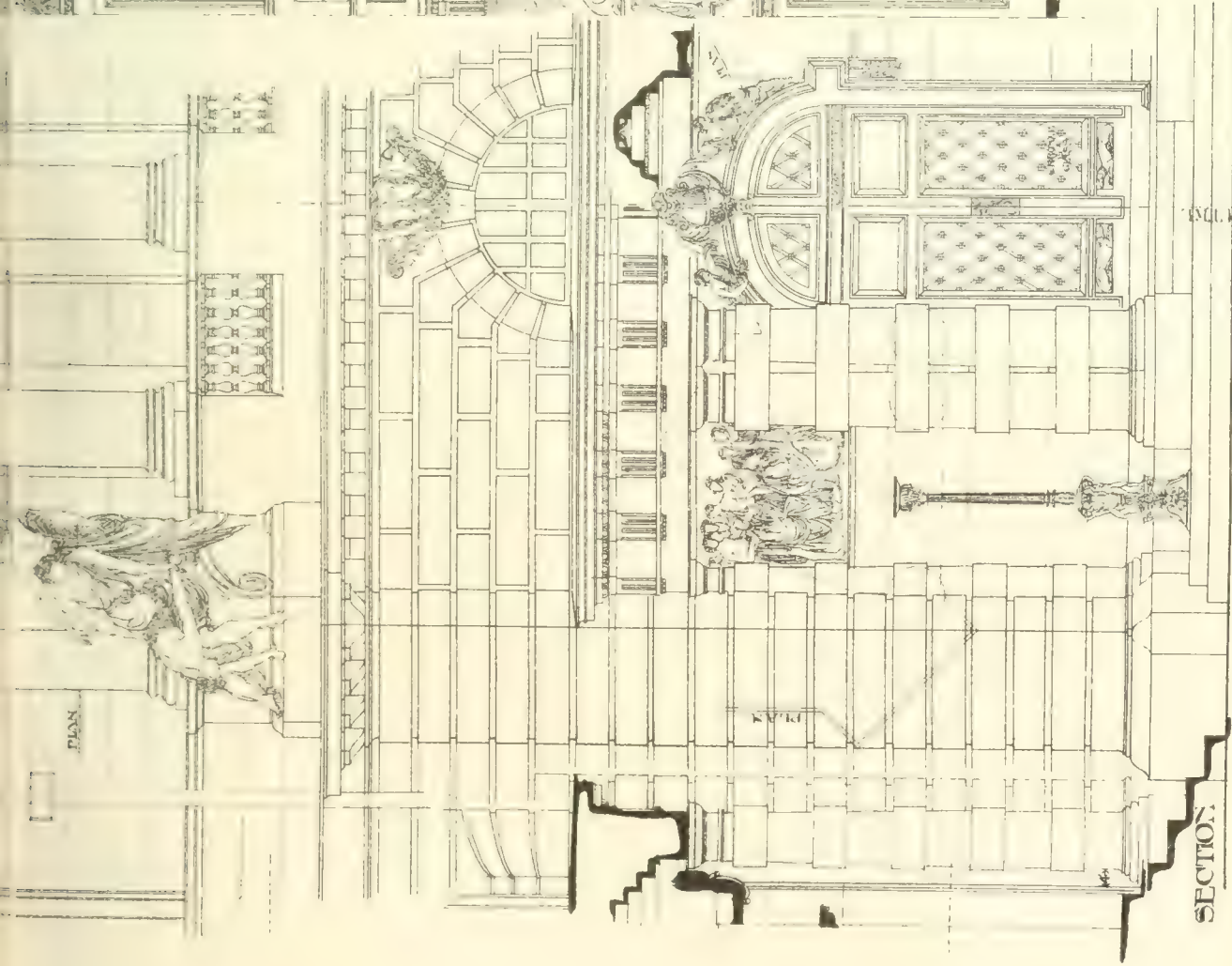
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FEET



DETAIL OF
HALL INTERIOR

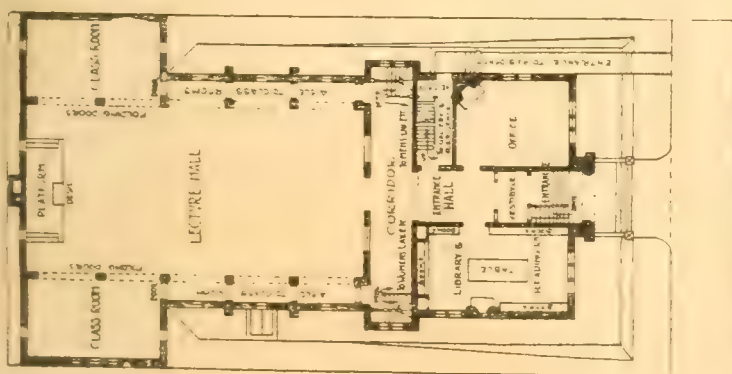




SOANE MEDALLION COMPETITION

DESIGN PLACED FIRST BY MATTHEW J. DAWSON





TORONTO BIBLE-TRAINING SCHOOL.

THE plan of this Transatlantic School is a very good one, and as seen in the accompanying perspective sketch, its exterior, with the high-pitched roofing slopes and dormered gables in half-timber, might almost be taken for an old block of country-side buildings in Normandy. The main part of the premises in front, facing College-street, is more monumental in style, with stone mullioned windows, and having a central gable flanked by octagonal turrets, imparting an importance to the entrance. The lecture-hall has a hammer-beamed roof, and the walls, with the arcades, are finished in brickwork. Messrs. Burke and Horwood are the architects, and the

Canadian Architect and Builder gives some photographic views of their work. The accompanying pen-and-ink study, by Mr. A. H. Chapman, was drawn for the same journal, which has now reached its 14th volume. The "Architect's Edition" is admirably printed, being produced with style and finish.

A large clock with three dials is to be placed in the tower of St. James's Church, Wolverhampton. It will strike the hours, and have all the latest improvements. Messrs. John Smith and Sons, Midland Clock Works, Derby, are doing the work. A few years ago the same firm put up the large clock in the parish church, Wolverhampton.

COMPETITIONS.

LEEDS.—A joint meeting of the members of the watch and library committees of the Leeds Corporation was held on Friday to consider competitive designs for the erection of a new police-station and public library in Dewsbury-road, the estimated cost of which is not to exceed £12,000. The designs accepted were those of Messrs. Bedford and Kitson, Greek-street, Leeds. The other premiated designs selected by the assessor, Mr. Leonard Stokes, of Westminster, were those of Messrs. Hanstock and Son and Mr. W. Ascongh Chapman.—The school of art scheme, which the committee of the Institute of Science, Art, and Literature have in hand, has now assumed a definite shape. The schedule of requirements shows that 31 rooms are necessary for carrying on the advanced and applied art work in Leeds. The area of these rooms will be 16,139sq.ft. It is proposed that the building shall consist of four principal floors—viz., basement, ground floor, first floor, and second floor. The basement will be used chiefly for applied art work, and the corridor will be of ample width to admit of showcases being placed against the wall. Deputations from the school visited the Royal College of Art, South Kensington; Glasgow School of Art; Birmingham School of Art; Battersea Polytechnic; Central School of Arts and Crafts, Regent-street, London; and Camberwell School of Arts and Crafts, in order to insure that all the latest improvements might be embodied in the Leeds school, and an elaborate schedule has been printed for the guidance of the competing architects.

NORWICH.—The directors of the Norwich Union Life Office have for some time past found their existing head offices in Surrey-street afford but inadequate accommodation, and have, therefore, acquired the whole of the property facing their present office, and extending from the Water Company's building to the chambers of Messrs. Cross and Barnard, with the gardens behind. The property includes the whole of Surrey Court, and although exhibiting no special architectural features, possesses historical interest as having at one time been the residence of the Earls of Surrey. In response to a limited invitation, architects in Manchester, Birmingham, London, and Norwich sent in competitive designs for the new headquarters, and the directors unanimously awarded the palm to a design which, when the sealed envelope was opened, proved to have been sent in by Messrs. G. J. and F. Skipper, London-street, Norwich, who have been appointed architects for the building. The design placed second, and for which a special premium of £50 was awarded by the directors, although none were offered by the conditions, was by Mr. Arthur R. Mayston, A.R.I.B.A., of 7, Great James-street, Bedford-row, W.C.

SALFORD.—The competitive plans for St. Matthias' Schools were referred to Mr. Royle, of Messrs. Royle and Bennett, architects, Manchester, as architectural assessor, to choose out of the number of plans sent in—viz., 72—not more than 10 as designs for the consideration of the committee. A sub-committee examined these plans with the assistance of the clerk to the Salford School Board, and eventually made the following awards:—1st, plan No. 59; 2nd, plan No. 29; 3rd, plan No. 22. The corresponding envelopes containing the names of the competing architects were thereupon opened, and the successful architects are:—Plan 59, Mr. Benjamin Bower, architect, Birmingham; plan 29, Messrs. Woodhouse and Willoughby, architects, Manchester; plan 22, Mr. Alfred H. Mills, architect, Manchester. The plans which have been received will be on view at the Town-hall, Salford, on Tuesday and Wednesday next, the 12th and 13th inst.

Sir F. Dixon-Hartland, M.P., chairman of the Thames Conservancy Board, and Lady Dixon-Hartland are defraying the cost of recasting the peal of bells of Sunbury Church to commemorate the beginning of the new century.

The plans for the entire restoration of the ancient parish church of Macclesfield were prepared in 1897, and the nave, chancel, tower, and chapels are now completed. The committee have succeeded in raising the sum of £18,000, and £1,000 in addition will be given conditionally on the whole sum of £21,250 being raised before the reopening on April 24. A proposal has been made, with the approval of the committee, to raise the remaining £2,250 by means of a shilling fund.

Building Intelligence.

COLINTON, ELINGHAM.—The late Sir William Fraser, K.C.B., left a sum of £25,000 for the purpose of founding and erecting a set of homes for poor persons. In the selection of beneficiaries, preference was to be given to authors and artists who are in necessitous circumstances. Shortly after his death, which took place about three years ago, his trustees intrusted the preparation of the plans to Mr. A. F. Balfour Paul, architect, 21, St. Andrew-square, and the completed buildings were opened on Saturday. The site is at Colinton, on the top of the hill behind the station, on the Hailes estate. The general plan consists of twelve houses and an administrative block, forming three sides of a square, and facing, on the south, a central court, round which runs a flagged terrace walk, reached by steps from the level of the court, and protected by a stone balustrade. This terrace culminates at the open ends in two lead-roofed belvideres, from which steps lead down to the ground level. The hall, which is in the centre on the first floor, is panelled in oak, with a large open fireplace, with overmantel at the end, is lit by windows on both sides, and has been furnished with specially-designed oak furniture. Flanking the hall block on either side is a dwelling-house consisting of a living-room, scullery, &c., and two bedrooms. Two larger houses, with kitchen, sitting-room, two bedrooms, scullery, &c., enter from angle towers at the corners of the court, of which the two remaining sides are devoted to eight dwelling-houses, four on each side, each containing a living-room, scullery, &c., together with a bedroom and bed-closet. Each of the houses is self-contained. The building throughout is two stories in height, and is of a Scottish Domestic character. It is built of stone from local quarries, harled and whitewashed, with red Corncockle stone dressings, and green slates cover the roof; while in the centre of the court stands a stone fountain, the water of which, issuing from the figure of a Triton, and falling into an octagonal basin, pours itself thence by gargoyles into a larger circular basin beneath.

EAST HAM.—The chairman of the East Ham Urban District Council on Wednesday laid the foundation-stone of the town-hall and municipal offices now in course of erection by the council at the corner of Barking-road and High-street South. The general arrangement of the plan of the buildings is in the form of the letter L. The official department, including town clerk's, engineer's, surveyor's, and accountant's offices, are in the left arm of the letter, parallel with the large assembly-hall over; the committee-rooms, mayor's parlour, and other departments are in the foot portion, and the council-chamber with police-court under in a shorter vertical arm on the right. The assembly-hall is 100ft. by 50ft., and will provide seating for 1,200 people independent of the platform and organ-recess at end. The council department is compact. The mayor's hall and ante- and waiting-room are all *en suite* with two large committee-rooms, and the latter are capable of being thrown into one. The council-chamber has side stained-glass windows and dome light in centre, having stained-glass panels therein. A public gallery for 100 burgesses will be at one end, with separate staircase approach. The room will be surrounded with carved oak dado, and the floor will be of polished oak. The police-courts beneath this chamber are practically separate, though communicating by corridors. Externally the building is designed in the Renaissance style, with a blending of German and Dutch features, suitable for town-hall. The materials adopted are red bricks and terracotta dressings of biscuit colour, and Westmoreland green slate roofs, the whole dominated by a clock-tower, 22ft. square to a height of about 150ft., with open belfry stage, and breaking up into pinnacles and open features at the summit. The total cost is about £35,000, exclusive of furniture. Messrs. Cheers and Smith, whose design was chosen in competition from 11 sets submitted, are the architects, and Mr. D. W. Barker is the builder.

LONDON, E.C.—The new fire-brigade station in Redcross-street, which has been erected to replace the smaller station in Whitcross-street, has been opened by the chairman of the Fire Brigade Committee of the London County Council. Mr. Adams (manager of the Works Department of the County Council), Mr. J. Bird,

and Mr. Owen Fleming were present. The site occupied by the station has a frontage of about 90ft. to Redcross-street, and was purchased for £30,000, while the cost of the building has been upwards of £12,000. The engine-room is equipped with two steamers, a horsed escape, a long fire ladder, and a hose cart ready for immediate use. The chief "run out" is arranged so as to be immediately opposite the scene of the great Cripplegate fire. In the upper part of the building there are thirteen suites for married men and a number of single men's quarters. The station, which is lighted with electricity throughout, has been built by the Works Department of the County Council under the direction of Mr. W. E. Riley, the superintending architect. There was also opened on Saturday a new fire station which the County Council have erected in Pennard-road, Shepherd's Bush, at a cost of over £12,000.

NAPSBUURY, ST. ALBAN'S.—The foundation-stone of a new lunatic asylum for the county of Middlesex was laid last week. The site of the new building is 440 acres in extent, and was purchased at a cost of £45,000. It is situated just outside St. Alban's, at Napsbury. The necessity for the new building has long been apparent, though the County Council have several times enlarged the asylum at Wandsworth. The plans are by Mr. Rowland Plumble, F.R.I.B.A., who has designed the buildings in the pavilion style to accommodate 1,150 patients, 100 of these to be in a separate building, which is to be used only by paying patients. A hospital to accommodate 224 persons is included. The estimated cost of the buildings alone is £358,100, or £311 per patient.

NEWCASTLE-ON-TYNE.—The Town Improvement Committee have approved a block plan for the erection of new buildings in the Side and Dean-street, submitted by Messrs. Marshall and Tweedy, architects, of that city. The new buildings will cover land now occupied by old property at the head of the Side, extending from Messrs. Harvey and Davy's warehouse down to the corner of Dean-street, embracing a large site on which Messrs. Robinson's warehouses stood until destroyed by fire last year, together with the Grapes Inn adjoining and the corner block at the junction of Dean-street and the Side, and extending up Dean-street to the new offices of the Manchester Fire Assurance Company. In addition to this, a large portion of the property facing the cathedral behind Amen-corner has been purchased. It is the intention of the new owners to erect a block of offices, &c., the area of which will cover about an acre. Messrs. Marshall and Tweedy will prepare the detailed plans and designs in conjunction with Mr. R. J. Leeson. The cost of the undertaking is estimated at between £200,000 and £250,000.

NEWPORT, SHROPSHIRE.—The Harper Adams Agricultural College at Edgmond, Newport, Salop, will be opened for the reception of students early in April. The college has been founded, under the will of the late Thomas Harper Adams, for the purpose of teaching practical and theoretical agriculture. A sum of about £50,000 was available for the scheme. The college buildings comprise chemical, physical, and biological laboratories, museum, library, lecture theatre, classrooms, students' common-room, and dining-hall. Accommodation is also provided for 50 resident students. The college farm consists of about 180 acres—mixed arable and pasture—and lies within a ring fence surrounding the college. The farm buildings have recently been erected at considerable expense upon a modern system, and a large and varied assortment of stock can be kept. All the necessary machinery and implements have been provided. The dairy is a separate building, and contains milk-room, butter and cheeserooms, store, and ripening-rooms. The workshops include a carpenter's shop, with benches, lathes, and tools; and the blacksmith's shop and pent-house are fitted up with forges and tools for horse-shoeing and other purposes.

OXFORD.—When the stonework of the inner faces of the old schools quadrangle, which now forms a part of the Bodleian Library, was carried out some 25 years ago, the new label bosses were left uncarved, although it appears from the view of the quadrangle in Loggan's "Oxonian Illustrata" (published in 1674) that their predecessors had been fashioned in the shape of conventional heads. These bosses have now been carved, and form a series of portraits of persons connected with the studies prosecuted in the "schools" which

formerly occupied what is now the ground floor of the library, or with the history of the library itself. The authorities for the portraits have, for the most part, been found among the Hope collection of engraved portraits. The carving has been executed by Mr. E. E. Hammond, acting under the direction of Messrs. Farmer and Brindley.

WATER SUPPLY AND SANITARY MATTERS.

SEPTIC TREATMENT OF SEWAGE.—At the last meeting of the Royal Scottish Society of Arts Mr. James Thomson, C.E., Edinburgh, read a paper dealing with the engineering aspect of the treatment of sewage, and with the problems presented to engineers of sewage purification works. The day, he said, was past when "paying" sewage works could be looked for, as the cost of recovering manure from the sewage was not a commercial success. The most important bacterial systems of sewage purification were shortly referred to and described, and the septic system was recommended on account of the very small area of ground which it occupied, the minimum amount of attention which its works required, the minimum amount of sludge they produced, and the smallest possible amount of smell which an installation of that kind created. Mr. Thomson was in favour of closed septic tanks and open bacterial beds for small communities, but for large communities, like Manchester, he was in favour of both open septic tanks and open bacterial beds. He was in favour of continuous filtration in preference to intermittent filtration for small communities, and for large communities of intermittent filtration. The sewage purification works in connection with the proposed lunatic asylum at Bangour for the Edinburgh Parish Council were referred to, and it was pointed out that there it was intended to dispense with automatic gearing, and to have an attendant to actuate the valves when required. The paper was illustrated by drawings.

CHIPS.

The memorial to the late Rev. E. L. Berthon, late Vicar of Romsey, will take the form of a stained-glass window, containing a medallion portrait, to be placed in the Abbey Church.

Mr. R. H. Bicknell, M.I.C.E., one of the inspectors of the Local Government Board, held an inquiry at the Rochdale Town Hall on Wednesday week into the subject matter of an application by the Rochdale Corporation for "sanction to borrow £3,600 for the provision of an open space, and for purposes of street improvements." The money required, the borough surveyor, Mr. S. S. Platt explained, in connection with the preparation of the land in Drake-street, upon which Halsestead foundry now stands, as an open space, and the improvement of School-lane and adjacent thoroughfares.

At Rodborough, near Stroud, Glos., a new boys' school was opened on Friday last. The building which cost about £3,500, has accommodation for 300 children. Mr. W. H. C. Fisher was the architect, and Messrs. Isaac Lewis and Sons were the builders.

One of the finest collections of ancient Roman pottery ever found in Kent has been discovered near Walmer Lodge, in the course of the laying out of the ground as a pleasure garden by Messrs. Mawson Brothers, of Windermere. The collection comprises about forty pieces, and they have been removed to one of the buildings adjoining the grounds, where they are being privately exhibited. They were found in two separate sets, some distance apart, 2ft. below the surface, and evidently marked the sites of two interments, for beneath each collection was a cinerary urn containing human remains. One of these urns is a green glass vessel, which was found inside a large wine jar of the period, together with a water-bottle. Some of the articles still bear the name of the maker.

A memorial brass has been placed in Banhar parish church in memory of William Cole, founder and for forty years head master of the grammar school in that Norfolk village. It was designed by Mr. John Gaymer, of North Walsham, and executed by Mr. H. East, of Norwich.

At the Thames Police-court on Wednesday Messrs. J. H. Cocks, Ltd., builders, of Arnold road, Bow, were fined £5 and ordered to pay 6 costs for neglecting to properly fence a circular saw.

The Mayor of Richmond, Sir J. W. Szilumpe formally opened on Wednesday a new elementary school established by the National Union of Teachers, entirely at their own cost, for the boys of the town. The school, which will accommodate 310 children, is built in a populous part of the borough.

LEGAL INTELLIGENCE.

WHAT IS BLUE LIAS LIME?—The hearing of the summons issued at the instance of Alfred Andrews, of the Blue Lias Lime Burners' Association, Medway Wharf, Grosvenor-road, Pimlico, against the Cam Portland Cement Company, Limited, of Meldreth, near Royston, for an alleged infringement of the Merchandise Marks Act, 1888, was to have been resumed before Mr. Horace Smith at Westminster Police-court on Wednesday, but to suit the convenience of the counsel engaged, it was at the last moment adjourned until Wednesday next, the 13th inst., at 11 30 a.m.

THE VALUE OF WOOD CARVING.—At the County-court at Salby, last week, T. Hardisty and Son, joiners and cabinet-makers, Salby, sued for the recovery of £15 balance of account on work done for Mr. John Wm. Hepton, architect to the Earl of Londesborough. The defendant paid into court £7 10s., and pleaded that the plaintiffs' charges were unreasonable and extortionate. The evidence of Mr. Richard Hardisty (a partner in the firm) was to the effect that in April of last year the defendant visited their premises, and asked him to undertake to restore a 17th-century oak cabinet. The work was finished on September 25, and included a great deal of carving, with which the defendant expressed himself highly satisfied. When the account of £35 was sent in defendant forwarded £20 on account, and asked for detailed statement. Defendant requested him to reduce the account, to which he could not agree, as it had occupied 800 hours—thirteen weeks and two days—at the rate of ten hours per day. He had only charged 9d. per hour. For the defence it was declared that the accounts were "cooked." The work had been well done; the action was defended purely on the ground that the charges were excessive, unreasonable, and even extortionate. His honour said, with the exception of one item, £1 13s. 8d., which could not be recovered, the verdict would be for the full amount with costs.

A FINSBURY-CIRCUS IMPROVEMENT AWARD: APPEAL DISMISSED.—At the City of London Court on Feb. 26, Messrs. Ralli Bros., 25 Finsbury-circus, sued Messrs. Wernher, Beit, and Co., 120, Bishopsgate Within, by way of an appeal under the London Building Act, 1894, for an order to set aside an award, dated Dec. 18, which had been made by Mr. Thomas Blashill and Mr. H. T. Gordon as surveyors in an arbitration with respect to premises in Finsbury-circus. Mr. R. M. Bray, K.C., said that the plaintiffs were the occupiers and lessors of Nos. 25, 26, and 27, Finsbury-circus. Their buildings were surrounded by a number of other buildings, of which, apparently, Messrs. Wernher had taken a lease from the Corporation. They had pulled down those buildings, and they now wanted to pull down all Messrs. Ralli's outside walls except the front wall. There was a west wall (the wall of No. 27), and there was an east wall (at No. 25), while the south wall formed the back part of the premises. The defendants wanted to pull all three of them down. If this were done the plaintiffs would be compelled to move from their premises for some months, and that would involve serious expenditure, probably amounting to £500. That they naturally did not want to do. The defendants' contention was that under the building Act they were entitled, as building owners, to do what the award had said they might carry out. Mr. Commissioner Kerr said the point in dispute was simply concerned with the construction of the Act of Parliament. As both parties had stated that they intended appealing whichever way the decision went, he would say at once that he was inclined to dismiss the appeal from the arbitrators. Before doing that the case might stand over so that the parties might go direct to the High Court, and have the matter decided there.

The King has appointed Mr. Lionel Henry Cust, M.A., F.S.A., to be Surveyor of Pictures in Ordinary to his Majesty, in succession to Sir John Charles Robinson, who, on retirement, is gazetted a C.B.

Colonel Luard has held an inquiry at Ilford into the application of the urban district council for sanction to borrow £1,000 for fire hydrants, £500 for a manual fire-engine, fire-escape, and other accessories, and £350 for waggons for scavenging purposes.

At the Liverpool Consistory Court on Tuesday Chancellor Esplin granted a faculty authorising the Bishop of Exeter, Dr. Ryle, and the other children of the late Bishop of Liverpool to erect in the Cathedral Church of St. Peter, Liverpool, a memorial in memory of their father. The memorial will consist of a Siena marble tablet surmounted with bronze mitre and the arms of the see. The Chancellor also decreed a faculty for the erection by fellow officers, in St. Augustine's, Liverpool, of a memorial tablet for a volunteer officer killed at Hamelsfontein, and another for filling in the windows of Christ Church, Waterloo, with stained glass at a cost of over £4,000, entirely defrayed by Mr. James Barrow.

Our Office Table.

THE well-known and long-established firms of Messrs. W. Oliver and Sons, of Bunhill-row, and W. W. Howard Bros. and Co., of Fenchurch-street, E.C., are amalgamating into a limited company with a share capital of £250,000, divided into 100,000 5s. cumulative preference shares of £1 each, and 190,000 ordinary pound shares. There will also be issued £150,000 of 4 per cent. first mortgage debenture stock. The vendors take one-third of the issued capital of each class in part-payment, and the remainder is offered to the public, the list opening next Tuesday and closing on Wednesday. The antecedents of both firms are too well known to need comment here, and there can be little doubt that a prosperous and lucrative future is before the shareholders in the new company.

THE Queen Victoria Memorial Committee appointed by the King recommend that a memorial be erected in the neighbourhood of the Abbey and Palace of Westminster, or of Buckingham Palace; the memorial to include as its most prominent feature a statue of the Queen. In connection with this recommendation, Mr. Shaw Lefevre again brings forward his proposal originally made in 1886, that a monumental chapel be added to Westminster Abbey at the south-east angle of the choir, and on the site of Mr. Labouchere's house in Old Palace-yard. It will be remembered that at the time Queen Victoria expressed herself favourably to the scheme, but considered that it would be more appropriate to her death than to her Jubilee. The proposal, for which the late Mr. Pearson, R.A., made some plans and designs was unsuccessfully revived in 1889, and was again reopened in 1899 by the handsome offer of Mr. Yates Thompson to contribute £40,000 for the erection of two aisles of Mr. Pearson's design on a site adjoining No. 5, Old Palace-yard, provided the Government would undertake to remove all the houses in Poet's Corner and in Old Palace-yard up to No. 5. This offer led to an undertaking on the part of the Government to remove all these houses at a cost of about £50,000. When this was effected a beautiful view of the Chapter House and of the south front of the Abbey was opened out, and there was a general consensus of opinion that no part of the site thus cleared should be built over. Mr. Thompson's offer was therefore not accepted, and since then the scheme has again slumbered. Meantime, as Mr. Shaw-Lefevre points out, under the Westminster improvement scheme, recently adopted by the London County Council and about to be carried out, the whole of this part of London will be greatly altered and improved. The Government have co-operated in the project by promising to remove the five houses belonging to them at the end of Abingdon-street nearest to Old Palace Yard, at a virtual cost of about £50,000. When these houses are removed there will remain only Nos. 5 and 6 in Old Palace Yard. It is now possible, therefore, to revert to the original scheme of 1886-87, and to erect a monumental chapel such as was then proposed in memory of the Queen. For this purpose there are only two possible sites—that in Old Palace Yard, advocated by Mr. Shaw Lefevre, which subtends an awkward angle with Henry VII.'s Chapel and the south transept; and the site of the Refectory, south of the Cloisters, which has the greater objections of being too remote from the Abbey to be regarded as an integral portion of the historic group of edifices, and of involving needless destruction of the scanty remains of the monastery buildings, the oldest portions of the Abbey.

THE members returned on Saturday to the London County Council include Mr. T. Walter L. Emden, J.P., President of the Society of Architects, who retained his seat for the Strand Division by a decisive majority; while Mr. Lewin Sharp, architect, was one of the new Progressive members for Brixton, and Mr. J. E. Sears, F.R.I.B.A., gained a seat in the same interest for North Hackney. Mr. William Goodman, builder, retained his position at the head of the poll for West Islington.

THE trustees of the National Portrait Gallery have accepted the following as gifts to the gallery, selected from the collection of theatrical portraits formed by the late Charles J. Wylie, and presented by Mrs. Wylie in memory of her husband:—Anthony Leigh, Charles II.'s favourite comedian,

painted at full length in 1689 by Sir Godfrey Kneller, in his famous character of Dryden's "Spanish Fryar"; Joseph Shepherd Munden, famous comedian, painted by G. Clint, A.R.A.; William Makepeace Thackeray, a full-length statuette, modelled by Sir J. E. Boehm, R.A.; and a small model of the monument to William Shakespeare in the church of Stratford-on-Avon, made by S. Brown in 1840. The trustees have also accepted the following portraits, as gifts to the gallery:—John Tyndall, F.R.S., painted by J. McClure Hamilton and presented by Mrs. Tyndall; Sir Francis Grant, P.R.A., painted by himself, and presented by his daughter, Miss Elizabeth C. Grant; the Rev. Charles Kingsley and Henry Kingsley, pen and ink drawings made and presented by Mr. W. S. Hunt. The trustees have also acquired by purchase a full-length portrait of Francis Bacon, Viscount St. Albans, attributed to Paul Van Somer. At the wish of the trustees, Sir J. C. Robinson, C.B., F.S.A., has deposited on loan in the National Portrait Gallery a bronze relief, containing the portrait of Sir Thomas Lovell, K.G., Speaker of the House of Commons in 1485 and Chancellor of the Exchequer to Henry VII., which was formerly affixed to the mansion built by Sir Thomas Lovell at East Herling, in Norfolk.

THE Royal Commission on Sewage Disposal, appointed in May, 1898, state, in an interim report issued on Monday, that they are unable at present to state with any degree of precision when their inquiry will terminate, inasmuch as some of the questions submitted to them can be properly determined only after careful and prolonged scientific research. Their secretary reported to the Treasury on Dec. 3 that they had held fifty-two meetings, had taken the evidence of eighty-seven witnesses, and had visited twenty-two sewage works. He added that, under the direction of the Commission, a large number of chemical and bacteriological investigations in relation to sewage disposal had been made by experts, and that a systematic examination of the land treatment of sewage was in progress.

THE report of the sub-committee appointed by the Bolton Technical Instruction Committee to visit various technical schools in England and on the Continent has just been published. In England the Committee visited ten places—viz., Birmingham, Leicester, Derby, Salford, St. Helens, Northampton Institute (London), Northern Polytechnic (London), Chelsea Polytechnic (London), Battersea Polytechnic (London), and the Goldsmiths' Institute (London). On the Continent twenty-six schools were visited, these being in Berlin, Dresden, Chemnitz, Nuremberg, Stuttgart, Reutlingen, Winterthur, Zurich, Mulhausen, Darmstadt, Crefeld, and Lille. The sub-committee are of opinion that the schools at Battersea, Chelsea, Darmstadt, and Salford are more on the lines of the school which should be erected in Bolton than any of the others visited. They are unable to indicate, even approximately, the cost of such a building, but their experience points to a minimum cost of £60,000, which, however, may be exceeded. If the future requirements of the town are to be anticipated, the cost may be £80,000.

THE charges for labour in connection with the transit of timber by water to the Midlands from Hull is arousing some attention. About a score of firms in Leeds, Halifax, Huddersfield, and other places have agreed to resist the extra charges for labour at Hull or at any port which adopts the scale. The Leeds circular is signed by more than twenty very well known firms and large buyers. It binds the respective signatories to refuse to pay any charge for labour, thus threatening the customary 2s. per standard, which has been in vogue for fifty years. The reason assigned for this is because the circular issued by the Hull Association is deemed "unnecessary and vexatious." When the circular reached Hull, the local association had already decided to decline to quote f.o.t., f.o.b., or carriage paid to those firms which had been in the habit of buying at a price in Hull and usual labour. Thus, if both sides adhere to their respective agreement, the Hull firms will lose many ordinary orders to rail, although their own circular did not levy any extra labour on rail orders of one standard and upwards.

THE late 13th-century archway of masonry found last April on the site of the old Blackfriars' Priory between St. Andrew's Hill and Queen Victoria-street, E.C., has been re-erected in the grounds of Selsdon Park, Croydon, by

Mr. Wickham Stokes, a past master of the Merchant Taylors' Company. The arch and the half-arch on the north wall measured about 11ft. in length, and the remaining arch on the east wall, at right angles to the other, added another length of some 11ft., giving a total of 25ft. of the walls of the Blackfriars' Priory remaining. The height of the main arch, which was formerly pierced by a window, was 13ft. from the lowest stonework then excavated to the apex. The Priory was built about 1276, with which date the character of the masonry agrees very closely.

In the current *Canterbury Diocesan Gazette* "A. H." gives the details of a bill, dated 1621, for the reparation of the chancel of New Romney parish church, as follows:—"Item, for one tonne of timber and too putte 21s.; item, for a payen a Sawyer two days and half to cuto the planks and half the boards 8s.; item, for four hundred and a half of lates 6s. 9d.; William Wode for 4 bordes 4d.; for 15 days work to the Carpenter 21s. 6d.; for 12 bushell of lyme 7s.; to the mason and his man for ten days work at 2s. 8d. the day 26s. 8d.; one load of tyles 22s.; one load of sande 8s.; for two thousand of Reparation priges at 2s. 6d. the thousand 5s.; one hundred and half of brades 3s. 10d.; for spicket 3d.; for three hundred of 7 penny nails 21d.; for three hundred of 5 penny nails 15d.; for one hundred of 4 penny nails 4d.; sum total £6 13s. 9d." Having regard to the extent of the work held to be necessary, the total looks in these days very modest indeed. According to a presentment made at the same time to the archdeacon, two of the main pillars of the chancel were "like to fall having been about half a year last past under propped, and the leads (of) the roof very much in decay."

An address on "Enamels" was given on Friday evening at the Royal Institution of Mr. H. Hardinge Cunynghame. During the 18th century and the early part of the 19th the art of enamelling on metal, which flourished three centuries ago, became, the lecturer explained, debased and discontinued, and as no adequate written accounts existed the processes had to a large extent to be rediscovered. This, however had been so completely done that there was no pigment known to the Mediaeval craftsman which we do not now possess, and we could imitate and surpass all their colours. Where modern art failed was in the bold and subtle arrangement which ancient art displayed and in the delicate tints which the old workmen knew so well how to use. The lecturer sketched the history of enamelling, mentioning the chief styles—cloisonné, champlevé, basse-taille, Limoges, Limousin, &c. Coming to the to the process of making the enamel itself, he showed that true enamel consisted simply of glass coloured by means of small quantities of iron, cobalt, copper, chromium, &c., and melted on the surface of metals or of pottery by means of intense heat. It was, he held, a scandal that English workers in enamel, instead of preparing their own enamels by processes which were perfectly simple, should go abroad for them and pay 20f. a kilogramme at Geneva of elsewhere. He showed how the enamel was put upon the metal, to produce the plate upon which the design was subsequently drawn, and described the subsequent operations required to finish the work. In conclusion he said a few words on the manufacture of jewelry, expressing his regret that from the universities down to the board schools knowledge seemed to be valued in proportion as it was divorced from practical utility.

Mr. W. D. Caroe, M.A., F.S.A., a past-president of the Architectural Association, who succeeded to the practice of the late Mr. Ewan Christian, to whom he was managing assistant, has been appointed architect to the Dean and Chapter of Canterbury.

A refuse destructor was opened at Barry, Glam., on Wednesday week. It is the first of the kind in Wales, and was constructed from plans prepared by Mr. J. C. Pardon, the surveyor to the council, and built by Messrs. Lloyd and Tape, Barry Dock, at a total cost of £8,000.

A great deal of work has been done during the three years in the way of bridge building and bridge repairing in Norfolk, necessitated in some degree by the passing of the Locomotives Act, 1898. No fewer than thirteen bridges have been rebuilt in the last three years, and two new bridges have been constructed, both over the Nar—one at Castleacre, and the other at Westacre; while thirty-four bridges have been strengthened. The bridges rebuilt at Wilton, Hilgay, and Stoke are considerable structures, made of steel. The cost of the Wilton bridge was borne jointly by Norfolk and Suffolk.

MEETINGS FOR THE ENSUING WEEK.

MONDAY.—Society of Arts. "Electric Railways." Cantor Lecture No. 1, by Major Philip Cardew, R.E., M.I.E.E. 8 p.m.
Bristol Society of Architects. "Constructional Steelwork in Building," by Archibald Dawney, A.M.I.C.E.
Clerks of Works' Association, Carpenters' Hall, London Wall. Monthly Meeting. 7.30 p.m.
TUESDAY.—Society of Arts. "Some Examples of Romanesque Architecture in North Italy," by Hugh Stannus, F.R.I.B.A., 8 p.m.
Institution of Civil Engineers. "The Aesthetic Treatment of Bridge Structures," by Joseph Husband, A.M.I.C.E. 8 p.m.

WEDNESDAY.—Carpenters' Hall Free Lectures. "Dwellings for the Working Classes," by W. E. Riley, F.R.I.B.A., Superintending Architect, L.C.C. 8 p.m.
Society of Arts. "The Proposed High-Speed Electrical 'Monorail' between Liverpool and Manchester," by F. B. Behr, Assoc. Inst. C.E. 8 p.m.
Edinburgh Architectural Association. "The Work of Cockerell," by J. M. Brydon, F.R.I.B.A. 8 p.m.

THURSDAY.—Society of Arts. "The Growth and Trend of Indian Trade—A Forty Years' Survey," by Henry John Tozer, M.A. 4.30 p.m.
Northern Architectural Association. Annual Meeting. 7.30 p.m.

FRIDAY.—Architectural Association. "Rowton Houses," by H. B. Measures. 7.30 p.m.
Birmingham Architectural Association. "Registered Architecture—an Analysis of the Society of Architects' Prescriptions," by Bulkeley Cresswell. 6.45 p.m.

THE ARCHITECTURAL ASSOCIATION.

—MARCH 8th. VISIT to Messrs. Broadwood's Exhibition of Enamels, designed by Architects and others. Members to report Messrs. Broadwood's, Great Finnerley Street, W., at 2.30 p.m., and to reduce their passes for the current session.
—MARCH 15th. ORDINARY GENERAL MEETING at No. 9, Conduit-street, 7.30 p.m. PAPER by Mr. H. B. MEASURES on "Rowton Houses."
—MARCH 16th. SPRING VISIT to Stanhope House, Park-lane, W., by kind permission of the Architect, Mr. W. H. Romaine-Walker. Members to produce their passes for the current session, and to meet at the building at 2.30 p.m.

G. B. CARVILL, Hon. Secs.
R. S. BALFOUR

The Society of Architects.

Founded 1884. Incorporated 1893.

ST. JAMES'S HALL, PICCADILLY, W.

AN EXAMINATION to qualify for MEMBERSHIP will be held on APRIL 2nd, 3rd, and 4th 1901, at St. James's Hall, Piccadilly, W. Entries close March 21st. Syllabus free. Past Examination Papers &c. are published in the Year Book, price Two Shillings.
C. MCARTHUR BUTLER, Secretary.
Society of Architects.

CHIPS.

An inquiry was held at the town hall, Newcastle-under-Lyme, on Tuesday week, by Mr. H. P. Bulnois, M.Inst.C.E., and Mr. L. W. Darra Mair, M.D., on behalf of the Local Government Board, concerning an application by the town council for sanction to borrow £15,000 for the purpose of constructing sewage-disposal works on the bacteria principle. Mr. J. E. Wilcox, C.E., the engineer, explained the details of the scheme.

At the annual meeting of the Artisans', Labourers', and General Dwellings Company, held on Wednesday in London, the chairman, Mr. E. Noel, and Sir R. Farrar criticised the housing schemes of the London County Council as likely to arrest the operations of the small builders and to relieve the great landowners of a responsibility which they might otherwise be willing to accept.

To celebrate the completion of the East Ham Electric Power Station shaft, Messrs. Wilson Bros. and Lamplough, the builders, invited the men who had been engaged on the work to join them at dinner at the Denmark Hotel, East Ham, on Tuesday evening, when several members of local governing bodies were present.

Lord Rosebery will open the new art gallery, Whitechapel, on the afternoon of Tuesday next, the 12th inst. The new gallery, which has been built at the cost of Mr. J. Passmore Edwards, the donor of the adjoining free library, has been erected from designs by Mr. C. Harrison Townsend, F.R.I.B.A., and was illustrated by plans and a double-page elevation in our issue of Jan. 20, 1899. In addition to the promises already announced, Mr. Frank Verney is sending for the loan exhibition three notable works—Van Dyck's portrait of Sir Edmund Verney, Lely's portrait of Sir Ralph Verney, and an Italian shepherd, by Leighton. Sir Philip Burne-Jones has promised his assistance in the hanging of the collection. There is still a great need of "watchers" and "guides," however, and any ladies or gentlemen who can undertake either of these duties during the whole or any part of the exhibition should communicate with Mr. Aitken, the curator, at the gallery, High-street, Whitechapel, E.

LATEST PRICES.

IRON, &c.		Per ton.	Per ton.
Rolled-Iron Joists, Belgian.....	28 0 0	to	28 10 0
Rolled-Steel Joists, English.....	9 0 0	"	10 0 0
Wrought-Iron Girder Plates.....	9 0 0	"	9 15 0
Bar Iron, good Staffs.....	8 7 6	"	9 7 6
Do., Lowmoor, Flat, Round, or Square.....	20 0 0	"	20 0 0
Do., Welsh.....	6 15 0	"	6 17 6
Boiler Plates, Iron—			
South Staffs.....	7 17 6	"	8 5 0
Best Snedshill.....	13 0 0	"	13 10 0
Angles 10s., Tees 20s. per ton extra.			
Builders' Hoop Iron, for bonding, &c., £8 15s.			
Builders' Hoop Iron, galvanised, £15 10s. 9d. per ton.			
Galvanised Corrugated Sheet Iron—			
No. 18 to 20.		No. 22 to 24.	
6ft. to 8ft. long, inclusive gauge.....	£12 5 0	£12 10 0	
Best ditto.....	12 15 0	13 0 0	
Cast-Iron Columns.....	£9 0 0	to	£9 10 0
Cast-Iron Stanchions.....	9 0 0	"	9 10 0
Rolled-Iron Fencing Wire.....	10 5 0	"	10 10 0
Rolled-Steel Fencing Wire.....	8 5 0	"	8 15 0
Galvanised.....	12 0 0	"	13 0 0
Cast-Iron Sash Weights.....	7 5 0	"	8 0 0
Cut Clasp Nails, 3in. to 6in.....	12 0 0	"	13 0 0
Cut Floor Brads.....	11 15 0	"	12 15 0
Wire Nails (Points de Paris)—			
0 to 7 8 9 10 11 12 13 14 15 B.W.G.			
11/- 11/6 11/9 12/8 12/9 13/8 14/3 15/- 16/- per cwt.			
Cast-Iron Socket Pipes—			
6in. diameter.....	£8 17 6	to	£7 5 0
4in. to 6in.....	6 15 0	"	7 0 0
7in. to 24in. (all sizes).....	6 15 0	"	7 0 0
[Coated with composition, 2s. 6d. per ton extra; turned and bored joints, 6s. per ton extra.]			
Pig Iron—			
Cold Blast, Lilleshall.....	106s. to 110s.		
Hot Blast, ditto.....	57s. 6d. to 62s. 6d.		
Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b.—			
Gas-Tubes.....	60 p.c.		
Water-Tubes.....	55		
Steam-Tubes.....	50		
Galvanised Gas-Tubes.....	47½		
Galvanised Water-Tubes.....	45		
Galvanised Steam-Tubes.....	40		
10cwt. casks, dowt. casks.			
Per ton.		Per ton.	
Zinc, English (London mill).....	£25 0 0	to	£25 10 0
Do., Vieille Montagne.....	26 0 0	"	26 15 0
Sheet Lead, 8lb. per sq. ft. super.....	21 0 0	"	22 0 0
Pig Lead, in 1wt. pigs.....	20 0 0	"	21 0 0
Lead Shot, in 25lb. bags.....	23 0 0	"	24 0 0
Copper Sheets, sheathing and rods.....	89 0 0	"	90 0 0
Copper, British Cake and Ingot.....	75 0 0	"	75 5 0
Tin, Straits.....	122 0 0	"	122 5 0
Do., English Ingots.....	126 0 0	"	127 0 0
Spelter, Silesian.....	17 10 0	"	17 12 6
TIMBER.			
Teak, Burmah..... per load	£10 10 0	to	£16 5 0
Bangkok.....	10 0 0	"	15 5 0
Quebec Pine, yellow.....	4 5 0	"	5 0 0
Oak.....	3 5 0	"	4 12 6
Birch.....	2 15 0	"	5 15 0
Elm.....	4 17 6	"	5 15 0
Ash.....	3 5 0	"	3 12 6
Dantisc and Memel Oak.....	3 0 0	"	4 12 6
Fir.....	3 0 0	"	4 2 6
Waincoat, Riga p. log.....	2 0 0	"	3 5 0
Lath, Dantisc, p.f.....	4 0 0	"	5 15 0
St. Petersburg.....	4 0 0	"	6 10 0
Greenheart.....	7 15 0	"	8 0 0
Box.....	7 0 0	"	15 0 0
Sequoia, U.S.A., per cube foot	0 1 9	"	0 2 6
Mahogany, Cuba, per super foot			
lin. thick.....	0 0 6	"	0 0 9
Honduras.....	0 0 6	"	0 0 7½
Mexican.....	0 0 4	"	0 0 4½
African.....	0 0 3½	"	0 0 5½
Cedar, Cuba.....	0 0 3	"	0 0 3½
Honduras.....	0 0 3½	"	0 0 8½
Satinwood.....	0 0 10	"	0 1 9
Walnut, Italian (logs).....	0 0 8	"	0 0 7½
American (logs).....	0 2 3	"	0 4 6
Deals, per St. Petersburg Standard, 120—12ft. by 1½in. by 1½in.—			
Quebec, Pine, 1st.....	£25 0 0	to	£30 0 0
2nd.....	17 10 0	"	21 0 0
3rd.....	12 0 0	"	14 0 0
Canada Spruce, 1st.....	11 10 0	"	14 10 0
2nd and 3rd.....	9 10 0	"	10 0 0
New Brunswick.....	8 10 0	"	10 0 0
Riga.....	8 10 0	"	10 0 0
St. Petersburg.....	11 0 0	"	18 10 0
Swedish.....	12 0 0	"	21 0 0
Finland.....	11 10 0	"	12 10 0
White Sea.....	18 0 0	"	22 10 0
Battens, all sorts.....	5 0 0	"	12 0 0
Flooring Boards, per square of 1½in.—			
1st prepared.....	£0 12 6	to	£0 19 0
2nd ditto.....	0 11 6	"	0 14 6
Other qualities.....	0 7 0	"	0 13 6
Staves, per standard M.—			
U.S. ditto.....	£27 10 0	to	£25 0 0
Memel, or pipe.....	230 0 0	"	230 0 0
Memel, brack.....	180 0 0	"	200 0 0
OILS.			
Linseed..... per tun	£22 0 0	to	£23 10 0
Rapeseed, English pale.....	26 0 0	"	26 10 0
Do., brown.....	24 15 0	"	25 5 0
Cottonseed, refined.....	19 10 0	"	20 0 0
Olive, Spanish.....	35 0 0	"	39 0 0
Seal, pale.....	25 15 0	"	26 0 0
Cocoanut, Cochin.....	29 15 0	"	30 0 0
Do., Ceylon.....	25 15 0	"	26 0 0
Palm, Lagos.....	27 0 0	"	27 5 0
Oleins.....	17 5 0	"	19 5 0
Lubricating U.S. per gal.	0 7 0	"	0 8 0
Petroleum, refined.....	0 0 6½	"	0 0 6½
Tar, Stockholm..... per barrel	1 8 0	"	1 0 0
Do., Archangel.....	0 19 6	"	1 0 0
Turpentine, American..... per tun	87 0 0	"	87 5 0

Trade News.

WAGES MOVEMENTS.

CHESTER.—The painters, with the exception of those employed by one firm, have gone out on strike. They are demanding increased pay for work out of town, and also for travelling time. At a meeting of the men on Saturday it was agreed to persist in their demands. The strike affects about sixty union men and a number of non-union men.

LEEDS PLUMBERS.—Six months ago the operative plumbers of the Leeds district asked their employers to increase the rate of wages from 5½d. to 9½d. per hour. The notice expired on Friday, and the matter having been considered by the employers, it was decided to offer the men 9d. an hour, and at the same time consent to certain modification of rules. The offer was accepted, so that there will be no interruption of work. One of the changes is that the men shall be paid wherever they chance to be working at the week-end, instead of being obliged to go to the shop for their money. A new rule is also being introduced to the effect that, before any steps are taken with regard to points likely to cause a dispute, three days' notice shall be given on either side, in order that an opportunity may be given to settle the question amicably.

TEESIDE.—A temporary standstill has occurred in the negotiations between the Teeside master builders and their joiners concerning the composition of the proposed Board of Conciliation. Objection has been taken by the masters to shipyard joiners, with whom they have nothing to do, sitting upon the Board. The men claim the right to include members of their union, wherever they may work. Application has been made by the Middlesbrough plasterers to the Master Builders' Association for an increase of 1d. per hour in wages. The association has replied that the state of trade does not warrant an advance, but expressing a willingness to discuss the question with the plasterers.

CHIPS.

A tablet of alabaster and mosaic has just been erected on the walls of Sootney Chapel, Lamberhurst, in commemoration of the late Mr. and the Hon. Mrs. Hussey. The tablet has been executed by the firm of Messrs. Powell and Sons, of Whitefriars.

In connection with St. Michael's Church, Southampton on Tuesday in last week, the dedication took place of the parish rooms and church buildings, after alterations and repairs, by the Lord Bishop of Winchester. The building has been newly roofed and a new floor provided on the ground floor, and the row of columns which formerly ran down the entire middle length as supporting pillars have been removed and iron girders placed across the top instead. A new porch and steps have been erected at the entrance door, and the electric light installed.

At the Leeds Town Hall, on Friday, Mr. R. H. Bicknell, an inspector of the Local Government Board, opened an inquiry with reference to a petition of the Corporation for the issue of a Provisional Order to confirm an improvement scheme for the Quarry Hill Sanitary Area. Mr. Wedderburn, K.C., raised the question of jurisdiction, contending that the requirements of the Housing of the Working Classes Act, 1890, had not been complied with, and the inspector promised to submit the matter to the Board.

There were few features of interest in the proceedings at the Auction Mart, Tokenhouse-yard, last week. The most important property brought into open market was the Beech-street building site, which, however, failed to go. The sale of freehold waterside premises at Wapping was an encouraging sign, whilst some West-end business premises went as usual without difficulty. But the supply of investments of a moderate class was particularly light for this period of the year. The returns of sales of property amounted to £53,680.

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ESTIMATES GIVEN ON APPLICATION.

LIST OF COMPETITIONS OPEN.

Nottingham—Sewerage Scheme for the Parishes of Colwick-Godding and Burton-Joyce
 Keighley—Public Library, North-st. (limit £9,000: Assessor) £50, £30, £20
 Ennis, Co. Clare—Additions, &c., to District Lunatic Asylum (limited to Irish Architects: Assessor) £50
 Melton Constable—Mission Church (300 places)
 Torquay—Illuminated Clock-Tower on the Strand

C. J. Spencer, Clerk, Public Offices, Basford, Nottingham Mar. 25
 W. H. Hopkinson, A.M.I.C.E., Boro' Eng., Town Hall, Keighley April 30
 John Enright, Clerk, Ennis District Lunatic Asylum, Co. Clare June 10
 The Rector, Melton Constable, Norfolk
 C. S. Wollen and S. Bulleid, Hon. Secs., 1, Lower-ter., Torquay

LIST OF TENDERS OPEN.

BUILDINGS.

Glasgow—Tiling at Pinkston Power Station	Corporation	John Young, General Manager, 83, Renfield-street, Glasgow	Mar. 9
Hop, Derbyshire—House		A. E. Turnell, Architect, Foster's Buildings, Sheffield	9
Stafford—Three Cottages, Corporation-street	Eley's Stafford Brewery, Ltd.	George Wormald, Architect, 19, Greengate-street, Stafford	9
Balquhain, Aberdeen—Alterations to Farm Offices		Davidson and Garden, 12, Dee-street, Aberdeen	9
Fishguard—School Buildings	Managers	The Architect's Office, Doldre-mont, Lampeter	9
Treorchy—Calvinistic Methodist Chapel		Roderick Morgan, 215, High-street, Treorchy	9
Enzie—Additions to Clochan Public School	School Board	Sutherland and Jamieson, Architects, Elgin, N.B.	9
Orrell, Wigan—Converting Property into Branch Store	Equitable Co-operative Society, Ltd.	R. Pennington, Architect, Clarence Chambers, Wigan	11
Formall, N.B.—Farmhouse	Urban District Council	L. and I. Falconer, Architects, Blaigowrie	11
Beckingham—Council Chamber, &c.	Urban District Council	F. Stevens, Clerk, Beckingham	11
Swanage—Laundry, &c.	Steam Laundry Co., Ltd.	Clifton and Robinson, Architects, Swanage, Dorset	11
Antrim—Business Premises	Rt. Hon. Viscount Massereene	Wm. J. Fennell, M.R.I.A., Architect, 2, Wellington-place, Belfast	11
Culham, Oxon—New Wing at Diocesan Training College		J. G. T. West, M.S.A., The Knowl, Abingdon	11
Rotherham—Rebuilding Crown Hotel	Whitworth, Son, and Nephew	H. L. Tacon, Architect, 11, Westgate, Rotherham	11
Gateshead—Victoria Junior School, Teams	School Board	Thompson and Dunn, Architects, St. Nicholas's Buildings, Newcastle	11
Cuskinny—Two Cottages	Savage French, D.L.	W. H. Hill and Son, Architects, 28, South-mall, Cork	11
Laleston—Curate's House	Corporation	Cook and Edwards, Architects, Masonic Buildings, Bridgend	11
Glasgow—Works at Partick Pumping Station	Industrial Co-operative Society	J. Lindsay, Interim Clerk, City Chambers, Cochrane-st., Glasgow	11
Leed—Alterations to Spinnow Store	Urban Council	John W. Fawcett, Secretary, 10, Albion-street, Leeds	11
Warminster—Technical Schools		W. H. Hardick, Architect, Warminster	11
Leigh-on-Sea—Six Villas and Five Terrace Houses	School Board	Alfred J. Martin, A.R.I.B.A., 11, Prittlewell-sq., Southend-on-Sea	11
Gateshead—Kelvin-grove School	Methodist Free Church Trustees	J. Landell Nicholson, Architect, 55, Northumberland-st., Newcastle	11
Downham—Residing Roof, &c., Bridge-street Chapel	Parish Council	John L. Bennett, Downham, Norfolk	12
Arnsid—Cemetery Chapel	West Ham Town Council	G. L. Hoggarth, Architect, 69, Highgate, Kendal	12
Dagenham, Essex—Dynamo-House at Small-Pox Hospital	H.M. Commissioners of Works	The Borough Engineer's Office, Town Hall, West Ham, E.	12
Bushey Park—National Physical Laboratory	School Board	The Secretary, H.M. Office of Works, Storey's Gate, S.W.	12
Ipswich—Alterations to London-road School	Corporation	Eade & Johns, Architects, Cornhill Chambers, Thoroughfare, Ipswich	12
Glasgow—Seven Tenements, Baltic-street, Bridgeton	Rural District Council	Frank Burnet and Boston, Architects, 180, Hope-street, Glasgow	12
Strabane—Fifteen Cottages	United District School Board	J. E. Sharkie, Clerk, Strabane	12
Heatn Five Houses and Shop, Highgate	Corporation	Rycoff and Firth, Architects, Manchester-road, Bradford	12
Alperton, Harrow—Classroom	Electrical Committee	Houston and Houston, Architects, 5, York Buildings, Adelphi, W.C.	12
Gloucester—Refuse Destructor	Rural District Council	Harry A. Dancy, Architect, 26, Clarence-street, Gloucester	12
Bristol—Superstructure of Avonbank Electricity Works	Methodist Free Church Trustees	Henry Williams, Architect, 24, Clare-street, Bristol	12
Strabane—Fifteen Cottages		J. E. Sharkie, Clerk, Strabane	12
Downham—Two Cottages, Priory-lane	North-Eastern Railway Co.	John L. Bennett, Downham, Norfolk	12
Kelso—Two Double Cottages at Mainhouse Farm	Woodwich Union Guardians	R. C. Cameron, W.S., Bank of Scotland, Elgin	12
Wetherby—Passenger Station	Guardians	William Bell, Architect, York	13
Postall Heath, Plumstead—Cottage Homes	North-Eastern Railway Co.	Church, Quick, and Whincom, Architects, William-street, Woolwich	13
Larne—Fever Hospital Improvements	Watch Committee	J. Pinkerton, Point-street, Larne, Ireland	13
Newcastle-on-Tyne—Stables, &c., Cookson's-lane	Corporation	William Bell, Architect, Central Station, Newcastle-on-Tyne	13
Hull—Extension of Nurses' Home at Royal Infirmary	St. Giles' Guardians	Botterill, Son, and Bilson, Architects, 23, Parliament-street, Hull	13
Bristol—Additions to Police Station, Avonmouth Dock	James Hendry	T. H. Yabbicom, M.I.C.E., City Eng., 63, Queen-square, Bristol	13
Hull—Parkkeeper's Lodge, West Park	North-Eastern Railway Co.	Joseph H. Hirst, City Architect, Town Hall, Hull	13
Camberwell, S.E.—Infirmary Extension, Brunswick-square	Rural District Council	Edwin T. Hall, F.R.I.B.A., Architect, 57, Moorgate-street, E.C.	13
Fraserburgh—Workshops and Store, Hanover-street	Select Vestry	William Reid, Architect, Saltoun-square, Fraserburgh	13
Scarborough—Goods Warehouse and Offices, Gallows Close		William Bell, Architect, York	13
Meltham—Additions to Church Infants' Schools		John Kirk and Sons, Architects, Huddersfield	14
Kilkenny—Twenty-One Labourers' Cottages, &c.		Kieran Comerford, Clerk, Kilkenny, Ireland	14
Dewsbury—Enlargement of Moorhills		John Kirk and Sons, Architects, Dewsbury	14
Belfast—Additions to Willowfield Parish Church		W. J. Fennell, M.R.I.A.I., Scottish Provident Buildings, Belfast	14

BUILDINGS—continued.

Monk Bretton, Yorks.—Vestry Enlargement, St. Paul's Church, London—Repairing & Maintaining Police Stations, Three Years	Metropolitan Police District Receiver	Wade and Turner, Architects, 10, Pitt-street, Barnsley	Mar. 14
Dewsbury—Two Villas, Northfield-road	Corporation	The Police Surveyor, New Scotland-yard, S.W.	14
Manchester—Extending Retail Fish Market	Corporation	F. W. Ridgway, F.R.I.B.A., Boro' Chambers, Bond-st., Dewsbury	14
Bowness—Rough-Casting Albert Hotel	Corporation	The City Surveyor's Office, Town Hall, Manchester	14
Invercauld, N.B.—Additions to Corndavon Lodge	Corporation	John Stalker, M.S.A., Architect, Kendal	15
Glasgow—House and Outbuildings	Corporation	Jenkins and Marr, Architects, 16, Bridge-street, Aberdeen	15
Ancoats—Washhouse, Laundry, & Engineer's Shed, Tame-street	Chorlton & Manchester Jt. Committee	E. Bremner-Smith and Bremner, Architects, Oswestry	15
Bowness—Alterations to Brookside Hotel, Windermere	Chorlton & Manchester Jt. Committee	A. J. Murgatroyd, Architect, 23, Strutt-street, Manchester	15
Halifax—House, Greenroyd Estate	James Osborne	John Stalker, M.S.A., Architect, Kendal	15
Abertidwr—Independent Chapel, Eglwysilan-road	Churchwardens	Walsh & Nicholas, Architects, Lancs & York Bank Chambers, Halifax	15
Savile Town, Dewsbury—Block of Cottages, Mill-street East	Mudge and Co.	Illyd Thomas, P.A.S.I., architect, 17, Quay-street, Cardiff	15
Ballymacreeilly—Villa	School Board	C. Marriott, Son, & Shaw, Architects, Church-st., Chambers, Dewsbury	16
Llanbadarn—Hotel	Corporation	W. J. Pennell, M.R.I.A.I., Scottish Provident Buildings, Belfast	16
Highbury Vale, N.—Repairing Stonework of St. John's Church	Rev. John Doherty	Teather and Wilson, Architects, Andrew's Buildings, Queen-st., Cardiff	16
Blackburn—Spiritualists' Hall, St. Peter-street	Urban District Council	The Vicarage, St. John's Church, Highbury Vale, N.	16
Hayle—Stables and Residence	London & South-Western Ry. Co.	Stones and Stones, Architects, 10, Richmond-terrace, Blackburn	16
Cleethorpes—School, Bursar-street	Urban District Council	Sampson Hill, Architect, Green-lane, Redruth	17
Glasgow—Additions to Rutherglen-road Washhouse	School Board	F. W. Croft, Architect, Victoria Chambers, Victoria-st., Gt. Grimsby	18
Cardiff—Warehouse, Paradise-place	Corporation	J. Lindsay, Interim Clerk, City Chambers, Cochrane-st., Glasgow	18
Allaghaderry—School House	Joseph Spiridon	Vvall and Sant, Architects, Cardiff	18
Distington—Converting Museum into Houses	Rev. John Doherty	Edward J. Toye, Architect, Strand, Londonderry	18
Farnworth—Car-Shed	Urban District Council	Wm. Carmichael, Parton, Whitehaven	18
Southampton—Army Medical Stores at Docks	London & South-Western Ry. Co.	Walter J. Lomax, Engineer, 11, Fold-street, Bolton	19
Carlton—Engine and Pump Houses	Urban District Council	John Dixon, Superintendent, Docks Department, Southampton	19
Edmonton, N.—Junior Mixed School, Raynham-road	School Board	R. Whitbread, M.S.A., Surveyor, Carlton, near Nottingham	19
Brentwood—School	Metropolitan Asylums Board	H. W. Dobb, 54, London-wall, E.C.	19
Cwmaman—Six Houses	Cwmaman Cottage Co., Ltd.	C. and W. Henman, Architects, 64, Cannon-street, E.C.	21
Blaugwrie—Enlargement of Manor Farmhouse, Marlee	Gas Committee	J. Llewellyn, Smith, and Davies, Architects, Aberdare	21
Manchester—Shed, &c., Bradford-road Station	Joint Hospital District Committee	Anderson, Chapman, and Co., Solicitors, Blairgowrie	21
Belper—Extension to Wards, &c., Isolation Hospital	Gas Committee	H. G. Newbigging, C.E., Rochdale-road Station, Manchester	21
Manchester—Chimney, Bradford-road Station	School Board	Hunter and Woodhouse, Architects, Belper	21
Feltham—Infant School, Cardinal Estate	Urban District Council	J. G. Newbigging, C.E., Rochdale-road Station, Manchester	21
Wimbledon—Additions to Electricity Station, Durnford-road	H.M. Commissioners of Works	W. Ralph Low, Architect, 10, Basinghall-street, E.C.	22
Bolton—Enlargement of Head Post-Office	Grammar School Governors	The Surveyor's Office, The Broadway, Wimbledon	22
Asby-de-la-Zouch—Girls' School and Head Mistress's House	School Board	The Secretary, H.M. Office of Works, Storey's Gate, S.W.	22
Norton Lees—School	Urban District Council	Barrowcliff and Alcock, Architects, Loughborough	23
Elland—Public Baths, South House Estate	Corporation	J. Norton, Architect, Alliance Chambers, George-street, Sheffield	25
Newport, Mon.—Power-House Foundations	W. Suffolk Standing Jt. Committee	George Hepworth, Architect, 20, Bradford-road, Brighouse	25
Sudbury, Suffolk—Police Station and Quarters	Miss Clayton	R. H. Haynes, Borough Engineer, Newport, Mon.	25
Middlebrough—Semi-Detached Villas, Phillipsville Estate	A. H. Higginbottom	Frank Whitmore, Architect, Chelmsford	Apr. 10
Sherburn-in-Elmet—House	Prior of St. Nicholas Hospital	A. F. Newsome, M.S.A., Architect, Albert-road, Middlesbrough	—
Colchester—Six Houses, Harnett-road	Hull Brewery Co.	J. M. Fawcett and Son, Architects, 26, Albion-street, Leeds	—
Weybourne-on-Sea—Weybourne Springs Hotel	Henry Cunliffe	J. W. Start, F.S.I., Architect, Colchester	—
Stanley—Hotel, Front-street	York Equitable Indus. Soc., Ltd.	R. Carter, Architect, Cromer	—
Leeds—Alterations to Macons' Arms	Hardwick Colliery Co., Ltd.	T. Ernest Crossling, Architect, Stanley, Durham	—
Talybont-on-Usk, Mon.—Alterations to Benaiah Chapel	Mutford Union Guardians	G. Fredk. Bowman, Architect, 5, Greek-street, Leeds	—
Harbledown—Two-Kiln (Oast, Brotherhood Farm	York Equitable Indus. Soc., Ltd.	J. Yorath, Maesmawr, Talybont, Mon.	—
Staleybridge—Liberal Club, Mottam-road	W. W. Crompton	W. J. Jennings, Architect, 4, St. Margaret's-street, Canterbury	—
London, E.C.—Warehouse Block, Old-street	Oldham School Board	J. Eaton, Sons, and Cantrell, Architects, Ashton-under-Lyne	—
Hull—Rebuilding Wheatsheaf Hotel, Prospect-street	Geo. Beasall	Alex. Gordon, M.S.A., Architect, 107, Queen Victoria-street, E.C.	—
Carlisle—Hotel, Castle-lane	A. E. Wynn	Freeman, Son, & Gaskell, Architects, Albert Chambers, Carr-lane, Hull	—
Newchurch, Lancs.—Cottage	Fish Selling Co.	F. J. Hobson, Architect, King-street, Rawtenstall	—
South Hindley—Two Cottages	R. Burlington	George Moxon, Architect, 26, Church-street, Barnsley	—
York—Alterations to Branch Stores, Haxby-road	A. H. Higginbottom	Athron and Beck, Architects, Doncaster	—
Nottingham—Motor-Car Works, Canal-street	Southampton—Cables, &c.	W. D. Pratt, Architect, Cauldon Chambers, Long-row, Nottingham	—
Heath, Chesterfield—Cottages (79)	Glasgow—Electric Wharf Crane (3 tons), Prince's Dock	W. M. Ashmore, Architect, New Queen-street, Chesterfield	—
Waterfoot—Enlargement, &c., St. James' School	Sutton Coldfield—House Wiring	Rev. J. T. Munn, Vicarage, Waterfoot	—
Oulton—Coalhouse at Workhouse	Buxton—Extension Plant at Electricity Works	Alfred Clarke, Architect, 126, London-road, Lowestoft	—
Bedlington—Cottage	Hammersmith, W.—Electrical Stores (One Year)	J. Radford, Gwythwynt, Bedlington	—
York—Four Houses and Shop, Balmoral-terrace	Egremont—Electrical Tramway Cars	Athron and Beck, Architects, Doncaster	—
Mossley—Rebuilding St. George's Vicarage	Bray, Ireland—Plant for Electricity Works	John Brooke, A.R.I.B.A., 18, Exchange-street, Manchester	—
Bury, Lancs.—Shop and Offices, Fleet-street	Wimbledon—Cables and Transformers (One Year)	Openhaw and Gill, Architects, 6, Fleet-street, Bury	—
Newcastle-on-Tyne—Rebuilding Theatre Royal	Shipley—Electrical Fittings	Joseph Carr, Secretary, 41, Mooley-street, Newcastle-on-Tyne	—
Hollinwood—Terracotta and Steel Work for New School	Fulham, S.W.—Electrical Stores, &c. (One Year)	J. Hilton, Architect, 36, Clegg-street, Oldham	—
Wombwell—Three Houses, Hough-lane	Warrington—Electric Tramways	Jno. Robinson, Surveyor, Wombwell, Yorks	—
Somercoates—Additions to Premises	Sunderland—Cables, &c. (One Year)	Percy B. Houghton, Architect, Furnival Chambers, Chesterfield	—
Castleford—House, Red Hill	Amsterdam—Electrical Plant, &c.	Garside and Pennington, Architects, Castleford	—
Harrogate—Detached House, Duchy Estate		Bland and Bown, Architects, Harrogate	—
St. Mellon's, Wales—Two Cottages		S. Rooney, 9, Quay-street, Cardiff	—
Great Yarmouth—New Premises, South Dene		George Waller, Architect, Middlegate-street, Great Yarmouth	—
Manorhamilton—House		A. A. Algeo, Manorhamilton, Ireland	—
Whitehaven—Rebuilding No. 19, Church-street		J. S. Moffat, M.S.A., Architect, 53, Church-street, Whitehaven	—
Egremont—New Tower to St. Mary's Church		Oliver and Dodgahun, F.F.R.I.B.A., Architects, Carlisle	—
Stanley—Hotel, Front-street		T. Ernest Crossling, Architect, Front-street, Stanley, Durham	—

ELECTRICAL PLANT.

Southampton—Cables, &c.	Corporation	Kincaid, Waller, and Manville, 29, Great George-st., Westminster	Mar. 11
Glasgow—Electric Wharf Crane (3 tons), Prince's Dock	Clyde Navigation Trustees	G. H. Baxter, Mechanical Engineer, 16, Robertson-st., Glasgow	11
Sutton Coldfield—House Wiring	Corporation	W. C. C. Hawtayne, Engineer, 9, Queen-street-place, E.C.	11
Buxton—Extension Plant at Electricity Works	Urban District Council	E. Calvert, Chief Elect. Engineer, Electricity Works, Buxton	12
Hammersmith, W.—Electrical Stores (One Year)	Borough Council	G. G. Bell, Engineer, 57, Fulham Palace-road, Hammersmith, W.	13
Egremont—Electrical Tramway Cars	Wallasey Urban District Council	J. H. Crowther, Engineer, Great Float, near Birkenhead	14
Bray, Ireland—Plant for Electricity Works	Urban District Council	Robert Hammond, M.I.C.E., 64, Victoria-street, Westminster, S.W.	15
Wimbledon—Cables and Transformers (One Year)	Urban District Council	The Electric Lighting Works, Durnsford-road, Wimbledon	15
Shipley—Electrical Fittings	Urban District Council	J. S. Rhodes, Clerk, Manor House, Shipley, Yorks	15
Fulham, S.W.—Electrical Stores, &c. (One Year)	Borough Council	W. H. J. Denselow, Town Clerk, Town Hall, Waltham Green, S.W.	20
Warrington—Electric Tramways	Corporation	Preece and Cardew, 13, Queen Anne's Gate, Westminster, S.W.	27
Sunderland—Cables, &c. (One Year)	Corporation	J. F. C. Snell, Boro' Elect. Eng., Dunning-street, Sunderland	29
Amsterdam—Electrical Plant, &c.	The Burgomaster	The Direction of Printing Works, Achterburgwal 213, Amsterdam	Apr. 1

ENGINEERING.

Tavistock—Girder Bridge over the Tavy	Rural District Council	John Northey, Surveyor, Lake, Lifton	Mar. 9
Glasgow—Hot-water Heating, Fossilpark and Langside Depots	Corporation	John Young, General Manager, 88, Renfield-street, Glasgow	9
Stapeley, Luton—Water-Supply Works	Luton Rural District Council	B. B. Franklin, Surveyor, 21, Market-hill, Luton	11
Bewdley—Two Service Reservoirs and Water Mains (9½ miles)	Corporation	R. E. W. Berrington, Civil Engineer, Wolverhampton	11
Aughrim, Ireland—Water Supply	Rathdrum Rural District Council	B. Manning, Clerk, Board Room, Workhouse, Aughrim	11
Luton—Water-Supply Works	Rural District Council	B. B. Franklin, Surveyor, 21, Market-hill, Luton	11
Santander, Spain—Dredger	Works Committee	The Commercial Department of the Foreign Office, Whitehall, S.W.	11
Stapeley, near Luton—Water-Supply Works	Luton Rural District Council	B. B. Franklin, Surveyor, 21, Market-hill, Luton	11
Wargrave—Mains Extension	Wokingham Rural District Council	John F. Sargeant, Clerk, Wokingham	12
Beverly—Steam Roller	Town Council	The Borough Surveyor, Guildhall, Beverly	13
Newmarket—Pumping Plant at Sewage Farm	Urban District Council	J. W. Metcalf, Surveyor, Town Hall, Newmarket	14
Maidenhead—Weighbridge	Guardians	William Weed, Clerk, Queen-street Chambers, Maidenhead	14
Aberdeen—Fuel Economiser, &c.	Electric Lighting Committee	J. Alex. Bell, City Electrical Engineer, Cotton-street, Aberdeen	15
Warrington—Pumping Plant	Corporation	James Deas, A.M.I.C.E., Municipal Offices, Warrington	15
Bollington—Pipe-Laying, &c. (2½ miles)	Urban District Council	W. H. Radford, C.E., Albion Chambers, King-street, Nottingham	16
Cuncough, Lancs.—Rebuilding Bridge	Lancashire County Council	W. Compton Hall, County Bridgemaster, County Offices, Preston	16
Trowbridge—Heating and Ventilating Technical Institute	Lancashire County Council	H. Ledbury, Sec., Timbrell-street, Trowbridge	16
Rakefoot, Lancs.—Bridge Works	Lancashire County Council	W. Compton Hall, County Bridgemaster, County Offices, Preston	16
Lowestoft—Removal of old Sewer Outfall at Ness Point	Corporation	G. H. Hamby, A.M.I.C.E., Boro' Engineer, Town Hall, Lowestoft	16
Dundee—Sea-wall (850 yards)	Town Council	Wm. Mackison, C.E., Municipal Offices, Commercial-street, Dundee	18
Bangor—Water Mains	Urban District Council	E. L. Woods, C.E., Bangor, Ireland	18
Cardiff—Steam Pipes, &c.	Corporation	Arthur Ellis, M.I.E.E., Old Post Office Buildings, Cardiff	18
Belfast—Three Timber Jetties, Muegrave Channel	Harbour Commissioners	C. F. L. Giles, Harbour Engineer, Belfast	19
Llanfair and Welshpool—Light Railway (about 9 miles)	Cambrian Railways Co.	A. J. Collin, Engineer, Oswald-road, Oswestry	19
Carlisle—Archway through Eden Bridge	Corporation	Henry C. Marks, A.M.I.C.E., City Eng., 86, Fisher-street, Carlisle	19
Pontypool—Widening and Repairing Bridge over Afon Llywd	Urban District Council	David J. Lougher, Engineer, Bank Chambers, Pontypool	20
Ilkerton—Widening Gallows Inn Bridge	Derbyshire County Council	J. Somes Story, County Surveyor, County Offices, Derby	20
Clietheroe—Water-Supply Works at Saddle	Rural District Council	John Eastham, Clerk, Church-street, Clietheroe, Lancs	23
Buxton—Steel Gas-holder Tank and Telescopic Gas-holder	Gas Committee	Harold Barker, Gas Engineer, Town Hall, Buxton	23
Newport, Mon.—Constructional Steelwork, &c.	Corporation	H. F. Parshall, Consulting Engineer, 8, Princes-street, Bank, E.C.	25
Kettering—Refuse Destructor	Urban District Council	T. Reader Smith, Surveyor, Market-place, Kettering	27
Dorchester—Sewage Purification Works	Town Council	G. J. Hunt, Borough Engineer, Guildhall, Dorchester	28
Penryn—Harbour Works	Harbour Authority	J. Partridge, C.E., Engineer, Town Hall, Penryn, Cornwall	30

THE BUILDING NEWS

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FRIDAY, MARCH 15, 1901.

TRADE COMMISSIONS TO THE ARCHITECT.

THE letter we published from "An Architect" a fortnight ago on "Illicit Commissions," and the report of the case he refers to in the same issue, is very instructive reading, as disclosing a condition of business transactions between the trade and the profession that is, to say the least, far from being satisfactory or straightforward. As our correspondent says, such a practice as that recorded is neither usual nor proper. As we have fully reported the facts of the case (see our "Legal Intelligence" Columns of March 1), we must refer the reader to the report itself. Suffice to relate, an architect and surveyor of Bishop Auckland brought an action against a firm of wholesale and retail ironmongers of Darlington to recover a sum alleged to have been overpaid in the accounts, and the defendants counterclaimed in respect to commissions to which they said the plaintiff was not entitled. The proceedings before the judge of the county-court showed that the plaintiff had entered into a verbal contract with the defendants to have a builder's commission of 10 per cent. on all orders he influenced, and it was in connection with an amount for gas-fittings which the defendants included in their accounts against plaintiff that the disagreement arose. The latter disputed his liability, and brought the action to recover the amount as being overpaid. The plaintiff ordered goods and received the commission on them, as goods supplied under the contract. The facts disclosed that there was a contract between the Bishop Auckland Industrial Co-operative Society and Mr. T. Hilton for the erection of thirteen houses. Nine of these houses were built by Mr. Hilton, and in respect of these £33 was expended in gas-fittings. Hilton sublet the contract to the defendants, and the plaintiff went to their shop and selected the fittings. A sum of £65 was allowed in the quantities for the fittings, but only £33 of it was required for the nine houses. The plaintiff selected the fittings, but had nothing more to do with them, and received a commission, or was credited with 10 per cent. on them. The defendants, who had received various cheques from plaintiff, one for £200, debited the latter with the £33 for gas-fittings; but this was by mistake, as the contract was sublet. The cross-examination of the plaintiff showed that he received a 3 p.c. professional commission from the Co-operative Society, that he ordered some of the goods and got a 10 per cent. commission on them under the agreement as well. The plaintiff said the £33 was not included in the £200 paid to him by Mr. Hilton. He sent his own cheque to the defendants for £200 to pay for ranges and other goods, and also towards his own account. He would get commission on £137 of it. The plaintiff maintained, of course, that the 10 per cent. commission in the circumstances was honest. It was a contract between the defendants and himself; it was a secret contract not necessarily known to the society; and in reply to the judge the plaintiff stated what was quite true, that ironmongers were in the habit of paying such commissions, and they often offered it to the architect for their influence. After hearing the arguments on both sides, his Honour said: "The plaintiff was entitled to recover this sum of £33; unless the defendants could show that he was a party

to allowing it to be taken out of the £200, they had no business to do it. Hilton had accounts with the plaintiff, who could do with the balance of the £200 as he liked. By giving judgment against Messrs. Sykes, he did not think they were prejudiced, as they would recover the amount from Hilton, who would be justified in paying it, and the society would see that it was not paid twice. It might be that Hilton would want credit from the plaintiff for it on his current account. As to the commission, he did not think it was for the defendants to say it was a dishonest transaction, as they were parties to it. He should not, therefore, ask the plaintiff to give the commission back. Whether it was open to the society to claim it, was another matter. Some architects took commissions, other did not. He thought, without saying it was dishonest, that it was a very undesirable practice, and he would not say whether the society could succeed or not. He therefore gave judgment for the £33 claimed, and dismissed the counterclaim, allowing costs to the plaintiff on both." The judgment, on the face of the facts, is reasonable. There was a private business agreement between plaintiff and defendants as to the 10 per cent. commission on all business which he brought to them in his capacity as architect; besides which, the plaintiff built houses on his own account, and purchased articles from the defendants. Apart altogether from this particular case, however, the practice of receiving commissions from tradesmen is objectionable, and to a certain extent dishonest, for it means that if a tradesman can afford to pay a commission to an architect, he can afford to reduce the price of his goods, and that the purchaser—the man who pays for the goods—is the right person to obtain any benefit. There would be some excuse for this double system of commissions if the profession was inadequately paid by their employers and it was a recognised thing for the architect to obtain a commission on the goods he ordered; but the architect's professional percentage is supposed to be a sufficient remuneration for his services to his client. The strongest objection that can be urged against the practice is that it must, in the nature of such a transaction, considerably weaken the attitude of independence that ought to be maintained by every architect in the discharge of his professional duties to his client. He cannot conscientiously accept fees or commissions from builders or tradesmen at the same time as he is engaged in looking after his client's interests. The two things are incompatible with strict impartiality or honesty. And, as our correspondent hints, the practice is unfair to the profession, and creates a very unfavourable impression in the mind of the public. If the case we have referred to awakens the profession to the question of taking commissions, even in a business-like way, and to a sense of the wrong done to the employer by such transaction, it deserves notice.

THE LONDON SKETCH CLUB.

A VERY interesting collection of the sketches of this club are on view at the Modern Gallery, 175, Bond-street. The president, Geo. C. Haité, R.B.A., is well represented by several water-colour drawings and sketches, some from Holland, brilliant and firm in touch. We especially note his "Clouds, Dordrecht," "Spring Time, Amalfi" (8), a view from a colonnade looking towards the bay, with its cliffs and town at the base. Mr. Haité has given us colour and bright sunlight effect in these sketches. "On a Canal" is broad and free. The view of "Richmond Hill" (38), "Coming Rain" (54), are examples of directness and good colour. Harry P. Clifford's work shows a keen sense of nature and broad handling, as in "Coming

Rain," "Marshlands" (45). Robert Sauber's spirited oil sketch of an after-dinner party, "For He's a Jolly Good Fellow" (11), is remarkable for its vigorous touch and suggestion of hilarity, "The Return of the Haymakers" (66)—a good-looking lass and her lover leading a party of merry-makers—is also full of life and colour, and we notice also his other vivid sketches, "When Love is Young" (27), "In Fairyland" (62), and his delightful piece of character painting, "After the Soirée" (109)—a beautiful fair girl putting on her cloak, behind whom stand two gentlemen paying her attention. W. Lee-Hankey sends two or three of his charming grey studies of Cornish fisherfolk. These are chalk sketches with faint suggestions of colour, as in "A Colour Scheme" (43), "Collecting" (47)—a girl carrying a little boy—is delightful in its sentiment, and there is also charm in his "Trees and River" (96). Two very clever sketches Cecil Aldin's "Horses Ploughing"—two horses pulling the plough over the brow of a hill, and Dudley Hardy's "A Good Harvest," a crowd of fisherfolk on a beach, are to be noticed—one as a clever study of horse labour, the other for its grouping and suggestion of a wet beach.

Dudley Hardy's boat and quay scenes are as usual breezy and fresh. Here we see the rain-beaten beach, with its group of fishermen; then, as in "Blow, Blow, Thou Wintry Wind" (46), a river and quay, the wind tearing through the sails of boats; or a rain-beaten coast in its grey tones and atmosphere (64). Tom Browne sends several sketches of character, slight in outline, of a semi-humorous kind. His old woman trudging along behind her dog on an open common with bread in a bag, is comical, "Coming Rain" (36); and his studies of "A Cavalier" (103), "Father Xmas," &c., all breathe the same spirit of humour. The old man's head in (22), by Dudley Hardy, is full of character. Claude Shepperson, in 65 and other sketches (59, 56) exhibits many admirable examples of effective colour by simple means. Starr Wood, in "An Old Custom" (80), "Near the Canal" (61), "The Appointment," "Masks and Faces" (100), "Collecting" (121) has shown his deftness in depicting character. In "Masks and Faces" we have a crowd going into the pit of a theatre, very cleverly drawn. F. S. Spenlove has a good canal scene (33). Cecil Aldin is a born artist. There is character and a sense of humour in "A Bit of Colour" (90), an old man without coat and spectacles, watering a red rose-tree in his cottage garden. Two or three clever sketches of a humorous kind may be noticed. "After the Ball" (86) is a capital piece of caricature—an elderly, bibulous-looking, red-faced gentleman with white shirt-front, by John Hassall, who sends also comicalities in "Hunting Land" (89), "Collecting" (93), "Have we Met Before?" a man fallen on the snow-covered ground confronting a rat, who is looking at his discomfiture. "Judgment" is another amusing study. Cecil W. Quinell draws the face of a pretty girl wearing a black hat with red roses and a black veil, over which snowflakes are driving (119). His "Wild Flowers," "Sybil" (74), and the pretty dark face of "Carmen" (125) are clever. Adrian Jones has also a few admirable sketches of landscape effect. Probably the contributions of the President are more finished, and may even be thought beyond sketches; but the majority of the contributions are really true sketches in which the artist has seized some pleasing impression of nature, some aspect of sunlight, or has given us a touch of humour and character. Many of them, especially those of Lee-Hankey, R. Sauber, Starr Wood, Dudley Hardy, Cecil Aldin, are impromptu studies of impression in which all the qualities of good sketches are to be seen. Some of them have

been sketched against time; but nevertheless they corroborate the truth that it is not so easy to make a good sketch as to paint a picture, and that the picture may be often a spoiled sketch. Every painter is aware that there is often more vivacity and interest in his rough sketches—qualities that are lost when they are worked up. The London Sketch Club, convinced of this fact, and desiring to save the reputation of many a talented artist who is impatient of finish and elaboration, yearly in this exhibition foster the art of sketching, and rescue many a vivid idea from oblivion or neglect.

THE LEYSIAN MISSION COMPETITION.

THE selected design for the proposed new Leysian Mission Hall and settlements to be built in the City-road, near Old-street, were on view this week in the hall at Errol-street. This is a very important scheme of the Wesleyan body, and the requirements of the committee include the provision of a number of clubrooms, classrooms, reading-rooms, residential apartments for students and others, besides drill-hall, a large hall and a small hall for public meetings, a row of stores and shops towards the main street. The building will be the great centre of the Leysian Mission, and will occupy an important site in the City-road.

The design selected by the committee for their extension scheme is that of Messrs. Bradshaw and Gass, F.R.I.B.A., of Bolton, and displays much ingenuity in the arrangement of the buildings on the irregular quadrangular site in the City-road, near Old-street. The boundaries on the east and south form an acute angle, and the City-road façade to east is occupied by a row of shops, 16ft. frontage and 24ft. deep. In the centre of this frontage is the main entrance and vestibule, of good width, with a semi-circular end, and on each side the main staircase to the great hall and upper stories. Behind this main frontage of shops on the ground-floor level are the women's rooms, approached by two corridors from entrance-hall, running east and west; classrooms, and ladies' reception and sisters' rooms; clubrooms for women and girls, parlour, secretary's offices, the latter near entrance. Another cross corridor along the top gives access to a number of classrooms in the rear, and there is also a semi-detached block of classrooms at the north side of site separated by an area, and on the other side are the lavatories and stores, separated by an area from the main block of classrooms. The staircases are cleverly arranged, and give easy access from hall, and the rear block of classrooms has also its own staircase. The architects have arranged their main entrance vestibule square with the raking front of the City-road, and by making the end semicircular have managed to meet the difficulty of preserving the rectangular corridors and classrooms by a sort of "rule-joint" arrangement, the main centre corridor being divergent or turned some degrees to the right of the axis of the entrance-hall. By this plan the obliquity is concealed. There are about four shops on each side of the entrance vestibule. The basement floor beneath is occupied by stores under the front shops, and the main centre block below the ladies' and girls' rooms provide for boys' club-room, coffee-room 27ft. by 16ft., classrooms, billiard-room 36ft. by 31ft. On the north side is a small hall 73ft. by 41ft., and a drill-hall at the back 59ft. by 33ft. 6in., with separate end staircases. The small hall is well approached through an angle ante-room from central hall, and the lavatories, &c., on the south side are convenient to the band corridor. On the first floor is the large hall, 96ft. by 74ft., with accommodation for 938 on the floor level, but the deep galleries surrounding the hall on three sides will provide

for over 2,000 people in all. There are pillars along the sides, and the main end entrance is in direct communication with the crush hall of central staircase, the central flight being 11ft. 9in. wide, with large well-hole. There is a commodious recess at west end of the hall for the orchestra, and underneath it for vestries, &c., and on each side of hall are fire exits in accordance with L.C.C. regulations. In the front over the shops the rooms will be let as offices. The side gallery stairs are direct, and lead to the street level, connected with the main central stairs and vestibule. The hall has a bold segmental ceiling in one large span intersected by the side lights, and the hall is lighted by an open area on each side. On the second, or gallery, floor the front is also occupied by offices, with steward's cloak-room, stores, &c. On the third and fourth floors on the north side of centre staircase are a suite of dining and drawing-rooms for young men who come up from the country to attend the classes and meetings, to be termed the Moulton House Residence, and on the south side is a corresponding suite of rooms for students from Cambridge, to be known as the Leysian Settlement. The floor above provides for three longitudinal rows of bedrooms or cubicles, with two corridors intervening; the centre row of bedrooms will be top-lighted. The fifth and last floor contain the kitchen and offices, sisters' room with matron's apartment and common room in the centre. Every block will be well lighted and ventilated. When we say the great hall, settlements, &c., will cover an area of about 21,500sq.ft., an idea of the extent of these compact buildings will be realised.

The main façade is treated in a free but restrained Renaissance spirit. The centre which forms the main entrance and staircase is carried up as a tower slightly hollowed at the sides along the upper story, and crowned with a dome. The south angle of façade has also a circular cupola termination, and the front is well relieved by the succession of flat, canted bay windows of the offices, and the arched balcony of the settlements. A sepia perspective, and several clever ink sketches of the crush hall, great hall, balcony, lower vestibule, &c., accompany the plans.

We believe seven other sets were submitted—one or two of these exhibit elliptical shaped halls; but the plans of the club and classroom, the entrances and exits are not so satisfactory or perfect, and we think the committee have made a good choice.

THE A.A.'S NEW SCHEME OF DAY CLASSES.

A SPECIAL meeting of the Architectural Association was held on Friday evening last, at 9, Conduit-street, W., to consider the scheme for day courses of instruction, to be carried on at the Great Marlborough-street Studios, brought forward by a special committee. This report was published in our last issue, p. 328. The president, Mr. W. H. Seth-Smith, F.R.I.B.A., occupied the chair, and the proceedings were marked by unanimity, the only jarring note to the tone of cordial approval of the forward movement which characterised the meeting being a letter from a past president, who has recently accepted a lucrative professorship at South Kensington.

The President, in opening the proceedings, said the selected hen had laid an egg concerning which she felt perhaps a little maternal pride as she presented it to the members for their inspection. Two courses were open to members—either to cook the egg, or to return it to the hen to be duly hatched and reared as a chicken.

Mr. ASTON WEBB, A.R.A., past-president, explained the proposals of the committee, giving credit to Messrs. Stokes and Slater for the energy they had thrown into arranging the scheme. He thought the questions for consideration were:—Were day courses of instruction required and worth organising? And, if so, was the Architectural Association the proper body to establish

them? The opinion of the Special Committee was that a youth would be better taught the elementary matters concerning his profession, the history of architectural styles, the methods of construction, and draughtsmanship, in regular classes than in the necessarily haphazard and often perfunctory manner that must prevail in an office, and there could be no doubt that a youth who had spent a couple of years in such classes would be a far more valuable assistant in an architect's office than the raw pupil who was picking up knowledge in a desultory manner. It would, however, be a great misfortune if the youth who had passed through a two years' course in such day classes were to regard himself as a fully-qualified assistant, or even to set up in practice. He wrote, therefore, to Professor F. M. Simpson, of University College, Liverpool, where similar classes had for some years been in existence, asking if his experience showed that this was the result of such courses of instruction. Professor Simpson replied that, so far as they could tell at Liverpool, there was not the slightest danger that a youth after two years' tuition would consider himself independent of training in an office. That difficulty disposed of, he regarded the scheme as an excellent one, and likely to be of great benefit to those entering the profession. Architects could not be too well informed as to the matters of construction and the great styles of the past, and their training ought not to be narrowed down to the absolutely essential duties of the occupation. The fact that a similar scheme had been successfully adopted in Liverpool might be looked upon as an augury for good as to London, and he hoped all would agree in an appreciative answer to his first question. As to the second one, whether the Association was the proper body to establish such classes, he thought all would be agreed. It was true there were now already art classes at South Kensington, and technical classes organised by the London County Council, but they required courses of instruction arranged by and taught by architects in practice. The Royal Academy had an excellent architectural school, entirely free, and very properly it insisted that intending students should already possess some knowledge of architecture before receiving this free instruction. The R.I.B.A. might possibly be expected to take this matter up, but as a matter of fact they had not done so, and thus the path was left open for the Association. As the experiment was going to be started in their own studio in Great Marlborough-street, at present unoccupied during the daytime, and as friends had come forward to absolutely guarantee them from loss during the first two years, while the classes were being organised, members would see that in adopting the proposals they were not running any financial risks at the outset. On the other hand, a real want would be met, and a great benefit would be conferred on all entering the profession if the scheme were adopted. The proposals were open to variation and development, as experience in working might dictate. As soon as the scheme was approved the classes would be advertised, and whether a sufficiency of students presented themselves or not would depend very largely on the attitude assumed towards the class by the senior practising members of the profession. If sound instruction were offered, principals would soon begin to advise parents and guardians to send their sons for two years to these day classes before coming to them as pupils, and, as was found with regard to University training, the years thus given to study would prove to be by no means wasted. If these day classes proved successful—and he believed they would do so—their success would enable the Association to greatly extend its scope and work. There was a great need for additional accommodation at 56, Great Marlborough-street, and hitherto lack of funds had hindered the expansion absolutely needed. In advocating the adoption of the report he would only add that it marked an important departure, and one which promised to be most beneficial to the younger members of the profession.

Mr. JOHN SLATER, B.A., past-president, in seconding the motion for the adoption of the report, remarked that when the Association adopted ten years ago Mr. Leonard Stokes's scheme putting an end to the voluntary system of teaching, it virtually committed itself to the present proposals. It was impossible to expect young men to give up their evenings all the year round to the study of their profession, and it therefore became necessary to provide day classes. Some of the success of the new movement would

depend on the reception given to it by the senior members of the profession; but still more would depend on the attitude assumed towards it by parents and guardians. If the latter realised how far better equipped a man would be for having been trained for a year or two in such classes, there would be plenty of applicants for admission to the schools. The day courses would not clash with anything now in existence in London.

Mr. LEONARD STOKES, past-president, supported the motion in an earnest speech. They would have, he remarked, great difficulties to face at the outset, and much would depend on the calibre of the professors appointed at the initiation of the classes. He believed that parents and guardians would hail the advent of a day-class scheme, and he, for one, felt that a youth could not derive anything but good from receiving a training in professional work before entering an office, where, unless a youth could discriminate, he wasted much valuable time. His experience had been that the more pupils knew when they entered an office, the more easily they learned, and the more speedily they became useful to the principal. Youths were better and more patiently taught by a paid instructor than by a busy and wearied practitioner.

Mr. ARNOLD S. TAYLER asked if the school would be open to men who had already served a three years' pupillage, and whether the full scale of fees would be charged to those who attended the classes on only one or two days a week.

The PRESIDENT replied that it would be impracticable to discuss the scheme at that stage in detail. As to the second question, he had no doubt that the present practice of the Association would be followed, and a proportionate reduction would be made to those who only took up part of the programme. The Special Committee had full power to arrange and modify the scale of fees, and would take the question into consideration. Indeed, for a time, as was the case originally at Liverpool, they must expect to have a number of pupils who could only give partial attendance.

Mr. ARTHUR J. STRATTON, till recently a lecturer on architecture at University College, Liverpool, said it was begging the question to ask whether any instruction was needed or not. There was an urgent need for day classes to be established in London. The evening classes of the Association were insufficient to properly train the student, and involved too much hard work on a young man after a day's duties in an office. In Liverpool it had been a constant source of wonder that such a system as they had been carrying on with success had not been started in London. So far from being too long, they had found that the two years' course might with advantage be extended to three years, and it had not had the effect of raising a youth above his proper level. The teaching offered in schools of art and in technical institutes was carried out in an amateurish way, and not to be compared in practical results with that afforded under Professor Simpson's guidance. The advantage of such teaching as that given in the University College, Liverpool, when supplemented with visits to work in progress, was very great. By the time a youth entered an office he was of immediate value to his employer, and began to reap the benefit of this tuition straight away. As to the curriculum, it was too early to discuss its details, but it was desirable to teach perspective in the first year's course. The three months' vacation was a great drawback as compared with the steady routine of pupillage. The scheme could not be in better hands than those of the A.A., and if properly inaugurated it could not fail to be a success.

Mr. ARNOLD B. MITCHELL urged that there was no time to lose in starting such an institution. Other nations were securing the industrial supremacy England till recently held, and unless our young men were highly educated they would be left behind even in architecture.

Mr. FRANCIS G. F. HOOPER also supported the scheme, which he wished had been started twenty years ago.

Mr. H. P. G. MAULE had entertained doubts as to the practicability of the scheme, but had been converted that evening. The premises in Great Marlborough-street were not worthy of the Association, and the new classes ought to be housed from the first in a better building with more adequate accommodation.

Mr. R. S. BALFOUR, Hon. Sec., also supported the system, and proposed a vote of thanks to the Special Committee for their ungrudging and painstaking labour.

The PRESIDENT said he had received the fol-

lowing letter from a past-President, who had recently obtained a valuable appointment elsewhere:—"Dear President,—I am sorry to see in the current number of the A.A. Notes the circular announcing the clauses of the Committee on the day-classes including my name as if agreeing with their recommendations. As you know that I am clearly of opinion that the proposal is unwise in the true interests of the A.A., I rely on your explanation to the meeting this evening that I entirely dissociate myself from the recommendation of the Committee to the present meeting. An important business engagement will prevent my attendance to-night.—Yours very truly, BERESFORD PITE, 48, Harley-street, W., March 8, 1901." He would only add that Mr. Pite was nominated a member of the Special Committee, and had never withdrawn from that body, and was, indeed, the only member who objected to the proposals. He could assure Mr. Maule that the Committee had in view the desirability of securing new premises. Three gentlemen had promised £250 each towards that object, and between £1,000 and £1,500 could be readily obtained from members. The only difficulty was to secure at a reasonable rate a site of sufficient size and well situated, not far from Oxford-circus, and if anyone could make a suggestion it would be thankfully received. He then put the resolution for the adoption of the report. This was, amid hearty cheering and applause, unanimously adopted, as was the vote of thanks to the Special Committee.

The remaining business was to pass the following necessary amendments to and alterations of the by-laws, all of which were, after some discussion, adopted:—

1. Add to By-law No. 14:—"Each student who has attended the Day Courses a distinction for one year shall be eligible for election as an Ordinary Member without payment of an entrance fee."
2. Add to By-law No. 15, after the words "each Ordinary Member"—"with the exception stated in By-law No. 14."
3. Add to By-law No. 27 at end "or can at the Hon. Sec. refuse."
4. Add to By-law No. 30 before the word "Auditors," "Honorary."
5. Add to By-law No. 36 the word "Honorary" before "Auditors" in every case.
6. By-law No. 43 to read as follows:—"A Special General Meeting shall be called by the Honorary Secretaries on the proposal of a Council member, or any member, not less than five, nor more than eight, weeks, after the receipt of a request, stating the purpose of the meeting, and signed by the proposer, and supported by at least three Ordinary Members. The purpose of the meeting shall be considered, and a resolution passed, and the meeting shall be held at the premises of the Association, advertised, and by poster, otherwise, as may be determined by the Committee, at least one week prior to the meeting, and no other business shall be taken at such meeting."
7. Omit By-law No. 44.
8. Add the following new By-law—"No member of the Committee shall be appointed to a paid office or to a post of honor with the Architectural Association."

DWELLINGS FOR THE WORKING CLASSES.

AT Carpenters' Hall, E.C., last (Thursday) evening, the fourth of the present weekly series of lectures to the members of the building trades was delivered by Mr. W. E. Riley, F.R.I.B.A., superintending architect to the London County Council, the topic being "Dwellings for the Working Classes." Mr. R. M. Beachcroft, L.C.C., occupied the chair. The address was illustrated by some forty slides, depicting matured schemes or executed buildings planned for the County Council. Mr. Riley prefaced the more practical portion of his lecture by briefly examining the legislation which is in operation, and its effect on building proposals. The measures referred to ranged from the Common Lodging Houses Acts, carried through both houses in 1861 by the seventh Earl Shaftesbury, amended and extended in 1863 and 1866, the Torrens' Acts of 1868 and 1879, and Cross's Acts of 1875, to the Artisans' Dwellings Act of 1883. The Royal Commission of 1884-5, on which the King sat, resulted in the Boundary-street Improvement, Bethnal Green, which was carried to a successful issue by the lecturer's predecessor in office, Mr. Thomas Blashill, the buildings being opened by the King and Queen on March 3, 1900. The report of the Royal Commission found, continued Mr. Riley, that overcrowding was becoming greatly aggravated, although many improvements had taken place in the condition of the houses of the poor.

It pointed out how evils arose through demolitions for improvement schemes, erection of public buildings, and the extension of railways. It urged more stringent regulations in regard to cellar dwellings, also that the number of inspectors employed by the district boards to control sanitation and building construction should be increased, and that there had been a failure in the methods of administration rather than a want of power to enforce an improvement in the direction of the Housing of the Poor. The sites of Millbank, Coldbath Fields, and Pentonville Prisons were recommended to be conveyed to the Metropolitan Board of Works with the view of erecting dwellings thereon. It further recommended that pressure should be put on the railway companies to provide workmen's trains within certain distances from London as opportunities arose, and that in case of demolitions caused by their extensions, they should be accompanied by an obligation to rehouse the persons displaced, and that the process of demolition and rehousing be carried out as near as possible simultaneously. The results of the Royal Commission's labours are to be seen in the Housing Act of 1886, the Local Government Act of 1888, and, lastly, the Housing of the Working Classes Act of 1890, which, with its most recent amendments, forms the basis of the operations employed in the County of London and most of the provincial cities and towns, for effecting the demolition of insanitary areas and erecting sanitary dwellings. This Act may be considered as a consolidation of most of what is worth preserving in previous legislation. The author then epitomised Parts 1, 2, and 3 of the Act, pointing out that the clearing of the Boundary-street area and the scheme now in hand at the Churchway area, St. Pancras, were undertaken under Part 1, while under Part 2 the Brook-street, Holborn, and the Ann-street, Poplar, schemes were carried out; and under Part 3 schemes had been put in hand for housing over 8,000 persons on the site at Tottenham Fields, Tooting, and another large estate had been purchased at Norbury. Mr. Riley then gave some pitiful details as to overcrowding, and exhibited a slide showing a typical slum in Seaton-street, St. Pancras. The scarcity of dwellings in central districts arises, he showed, from many obvious causes besides the large improvement schemes and the clearing of slums. One insidious cause is an operation which is not so apparent to the general public—i.e., the constant displacement of poorer dwellings in order to make room for buildings of the warehouse and manufactory class. A limited number of these private enterprises had come under his notice since November last, and he was astonished to find that as many as 3,028 persons will be displaced by only three schemes. It is proposed to rebuild houses to accommodate about 55 per cent. of those removed, and the new houses will probably be built under better sanitary conditions than the existing ones; but in all these cases displacement will occur long before the new accommodation is provided, and the temporary difficulty of finding house-room will be thereby increased. These schemes are to take effect in districts of London which are already overcrowded. The lecturer proceeded: I now ask you to assume that an area has been condemned as insanitary, and has been cleared under, say, Part I. It will at first sight suggest itself that the conditions on which the land and the buildings could be valued under the Act of 1890 would have made the process of clearing and rehousing those who lived on the area a simple and facile matter; but the meaning which is attached to the valuation clauses may be stated at the outset to prevent any scheme in the central districts of London being carried out without some financial assistance either from the rates or from the improvement itself. It would seem evident to all who have given any thought to this question that the thousands of small two-story cottages which exist in various districts of London—ill-constructed, badly-adapted, and in the last stages of habitable use—if they are paying a fair return at the time they are seized, could easily be replaced without financial difficulty by healthy block dwellings, which have far more economic arrangements, planning, one staircase serving a number of tenements, which are carried to a greater height on the one foundation. Practice, however, does not justify this assumption. When the area is seized and cleared, the land is valued according to its position at what is called its "commercial" value. This commercial value is, almost without exception, far in advance of the price that any

rehousing scheme can possibly pay when the calculation is based on the rents which can usually be paid by the poor in the neighbourhood of the improvement. Although money can be borrowed on the security of the rates by not only the County Council, but by most other municipal bodies, at about 3 per cent., the difficulties of removing the poor from crowded and insanitary conditions of life and placing them in sanitary and healthy dwellings, even on the poorest standard permitted, is well-nigh an insuperable difficulty unless financial relief is forthcoming from some quarter. Having quoted a typical case showing the impossibility of providing at a remunerative rental adequate accommodation for the extremely poor, the author remarked that some people waste their energies in criticising the rent levied and the dwellings built by the London County Council. They do not appear to understand that the operations of the Council in this work have necessarily to be conducted on a paying basis, and that there is no other authority building dwellings for the working classes at the present time in the county whose financial procedure is strictly comparable with theirs. It is thus evident that those who urge the County Council or other authorities who are engaged in clearing insanitary areas to replace unhealthy, overcrowded dwellings by healthy ones, replete with modern sanitary appliances, and which provide a cubic air space of 400ft. per person at the same rent paid under the old conditions, are demanding an impossibility unless financial support is forthcoming from some quarter or other. The problem of rehousing has been accomplished when healthy accommodation can be provided at the same rate per foot super. as was paid by the poor for the squalid overcrowded dwellings which were cleared away. It is not generally understood that much of the land on which the large dwellings companies in the County of London built prior to the advent of the London County Council in 1889 was sold to them by the Metropolitan Board of Works at a reduced rate, with an obligation to build dwellings thereon. Over 27,000 persons were housed in this way, and this reduction in the price of land which was charged to these companies is now recognised in housing questions as "writing down" land to housing values. Several of the sites on which the County Council is now building were cleared by the Metropolitan Board of Works, and have been offered for sale without success from time to time by public auction, with the same obligation. That is, the Metropolitan Board of Works sold many of the best sites, and were unable to dispose of the inferior ones, which were left as a legacy to the London County Council, and to some extent qualified their success in their earlier efforts to rehouse the poor. It may be accepted as a broad rule that the price of land, and the most economical use of it, govern the maturing of any housing scheme in the central districts of London. The site of Reid's Brewery in Clerkenwell-road was purchased recently for £200,000, and after careful consideration was valued by an expert at £45,000 if its use were limited to housing purposes. Broadly, it costs 15s. to 17s. per foot super. to clear slums in central districts; but very few housing schemes can be made to pay if the charge for land alone is more than 5s. per foot. The price paid by the ratepayers for clearing areas and rehousing the poor upon them is an investment which it is presumed repays itself in better sanitary conditions and in the general welfare of the community. Let us assume that the cost of the land has been assessed, and that it has been decided to erect blocks of flats as being the most suitable appropriation of the site. A number of sketch plans is prepared showing what accommodation can be provided on the site. The plan giving the largest number of rooms, which it is thought will comply with the requirement of the Government Department, is then valued by an independent valuer at the rents ruling in the particular neighbourhood under consideration. After deducting the outgoings named above, and also the cost of collecting rents, management, and losses by empty tenements, the balance of the income is capitalised. From this capitalised balance the value of the land is taken, and the sum which will insure the redemption of both land and buildings in fifty-nine years is further deducted, and this final balance is devoted to constructing the buildings ready for occupation. The insurance for redemption in fifty-nine years is called the "Sinking Fund." It will thus be seen that all the County Council's dwellings

which pay their way should be handed over free to the ratepayers of London in fifty-nine years after completion. If this much-talked-of "Sinking Fund" period were extended from fifty-nine to ninety-nine years, the reduction of the rents of the County Council's dwellings would be very considerable. How much greater a reduction would be effected were there neither a "Sinking Fund" for land nor buildings, as is sometimes the case with certain municipalities, trusts, and companies! The site of the old Millbank Prison is one of the estates recommended by the Royal Commission to be appropriated for housing purposes. It is laid out for seventeen blocks of workmen's dwellings, comprising over all two one-roomed tenements, 485 two-roomed, 392 three-roomed, 16 four-roomed, and one five-roomed tenement, and will provide a total accommodation for 4,431 persons. The estate is situated at the rear of the Tate Gallery, and the blocks are (therefore appropriately) named after famous English painters. Hogarth, Landseer, Leighton, Millais, Romney, and Turner Buildings are already occupied; the rest of the blocks are in course of erection. The planning was arranged to insure a through current of air and sufficient ventilation under all circumstances. St. Oswald-street is 60ft. wide, and the remaining streets are 50ft. To converge the traffic east and west towards the Embankment, and ultimately give direct communication in the same quarters by opening up the ends of Dandonald-street, a large uncovered patch in front of Turner and Ruskin Buildings is to be used as a garden. The Reid's Brewery site, Clerkenwell, was acquired by the Council for the provision of accommodation for persons to be displaced by the formation of the new street from Holborn to the Strand. The site has frontages to Clerkenwell-road, Leather-lane, Portpool-lane, and Gray's Inn-road. The plan has received the approval of the Secretary of State, and provides for the erection of five-story block dwellings all round the site except on the frontage to Gray's Inn-road, where the existing buildings will remain for the present. The main interior of the site will be occupied by five five-story transverse blocks of dwellings divided by yards and gardens. The narrow end of the site next Gray's Inn-road will contain another short block of five-story dwellings, and the remainder of the site between this block and Gray's Inn-road frontages will be laid out as a playground and garden. An estate office and 23 shops will be provided on the ground floor of the dwellings facing Clerkenwell-road and Leather-lane. The accommodation will consist of 551 tenements, of which only 13 will be "associated" and the remainder "self-contained." The 13 associated tenements all consist of one room; there will be 361 two-roomed tenements, 136 three-roomed tenements, and 41 four-roomed tenements. Accommodation will be provided in all for 2,614 persons, exclusive of the shops. There are various types of buildings (as were shown by lantern slides), which practice in different parts of the country has indicated as the most suitable in their respective localities for rehousing work. These may be summarised as (a) blocks of flats with (1) associated tenements, and with (2) entirely self-contained. There are combinations of these two types, but I will not trouble you with too much detail; (b) cottages of (1) independent self-contained character, and (2) cottage flats; (c) lodging-houses (1) for men, (2) for women, and (3) for collective families. In a typical associated tenement the two sculleries and domestic offices are common to three three-room and three two-room tenements. This is generally considered the cheapest form in which block dwellings can be constructed. Most of those more recently built by the Peabody Trust are of this type. One-room tenements let for about 3s., two-room for 5s. 6d., and three-room for 6s. 6d. Most of the buildings erected by the Guinness Trust are also planned on somewhat similar lines, and there is little difference between the rents charged and those obtained by the Peabody Trust. Another slide was here shown taken from a plan of workmen's dwellings erected at Liverpool in Victoria-square. They were designed by Mr. Clement Dunscombe, the then city engineer of Liverpool. Five blocks of buildings were erected round a large courtyard fronting Casneau-street, Juvenal-street, Kee-street, and Lond-street. They are five stories high, constructed in brick. These are of the associated type, having a laundry, two sculleries, and two sets of domestic conveniences to serve two two-room and two three-room tenements. The rents charged are 3s. 6d.

and 4s. 3d. for two-room, 5s. and 5s. 6d. for three-room tenements per week. These and other areas in Liverpool were cleared under local powers. There appears to be no provision made for the redemption of either land or buildings in the scheme, which cost a little over £68,000 for land and buildings, and returned an average for the ten years 1890-99 of £2 7s. per cent. The next slide showed a block of superior-class tenements on the Millbank Estate. There are 43 two-room, 39 three-room, and three four-room tenements. The block is five stories high, and contains accommodation for 430 persons. The average net area of living rooms is 157ft., and of the bedrooms 112ft. This block is one of the most recent opened by the L.C.C. It cost about £87 per room, which equals 8d. per cubic foot. Each tenement has an independent scullery and domestic conveniences. The plan shows the requisite furniture, and it will be seen that the apportionment of the area can be made so as to accommodate without difficulty the number of persons for which it is designed. The next slide showed an arrangement of ingeniously planned tenements built lately by the Hayles Trust in St. George's-road, Southwark. The type shown provides two three-room tenements to each staircase landing. The unproductive scullery which is provided in the self-contained plans is omitted, and an open balcony in the rear of the blocks containing a copper, food-cupboard, coal-box, and domestic conveniences is provided in lieu. These are readily let at an average of 7s. 6d. and 7s. per week. They were designed by Messrs. Waring and Nicholson. The outgoings for these dwellings are not more than 33 per cent., out of which a sinking fund is provided to redeem the buildings in 30 years. The cost of management in this case may be considered as very economical. I commend the plan as very ingenious, and if I could feel assured that the necessarily frequent visits to the copper from the living-room sinks on washing-day in cold weather were not injurious to the health of the persons concerned, I should regard the type very favourably. The cost was 8½d. per cubic foot, though only a very limited portion of the flooring is constructed in fire-resisting materials. The next slide illustrates a carefully thought out plan giving sketches of the domestic offices only of one of the cheapest types of self-contained tenements in the County Council dwellings. The motive of this plan is to obtain a ventilating lobby between the scullery and the closet without sacrificing outside wall space. It contains copper and washing-sink with coal-box under in a very compact manner. This part of a tenement is never counted as habitable space, and is not in itself considered rent-producing. It is, however, frequently reproduced in block dwellings, where rigid economy in planning is of great importance. Another type of three-story self-contained flats has lately been constructed in Dryden-street and Rachel-street, Liverpool. The cottages contain one four-room tenement on the ground-floor, and four two-room tenements on the two upper floors. There are the usual domestic offices to each tenement, except to those on the first floor, where, instead of a scullery, a sink is brought into the living-room to allow of the construction of a balcony to give access to the second floor. These cottages are an improvement and adaptation of a type designed by Messrs. H. Percy Boulnois and W. Goldstraw. The rooms are unplastered, and cost per cubic foot averages about 8½d. Any reduction, therefore, on the rent level of London must be economised out of management, repairs, and cost of land, which is written down to about 12s. a yard super. I am indebted to the Deputy Surveyor of Liverpool, Mr. Turton, for the information and the loan of the plans. In the Tottenham scheme, which was fully described, it is proposed to put 8,532 persons on an estate of about 38½ acres. The Norbury site lies on the west side of the main road (London-road), running from Streatham to Croydon, and about a quarter of a mile from the county boundary. The whole plot has a frontage to the road of 500ft., and is well suited from a building point of view, rising gradually from the London-road to a slight eminence, from which it slopes gradually in the direction of Mitcham Common. The frontages will be reserved by the vendor for the erection of shops, leaving two 45ft. openings for roads to develop the backland. The estate is about a quarter of a mile distant from Norbury Station. The estate provides for the erection of 551 single cottages of

three, four, and five rooms each, and 211 cottages each containing tenement flats of two and three rooms. Two roads 45ft. in width, planted with trees, run east and west through the estate, and subsidiary roads, 40ft. in width, will also be formed. Provision for a small open space dividing the site is also made. It is estimated that about 5,800 persons can be accommodated on the site, or 195 persons per acre, and the average number of cottages per acre would be about 25. The rents proposed to be charged are approximately as follows:—Single cottages, three rooms, 7s. to 9s.; two rooms and small kitchen, 6s.; four rooms, 9s. 6d.; and five rooms, 11s. to 11s. 6d. The Mill-lane Lodging House is a type of lodging house devoted to men only, the charge being 6d. a night. It closely follows the type of those known as the Rowton Houses. It is intended to accommodate 799 lodgers, not counting the staff, who must reside on the premises. The administration rooms and staff quarters are on two sides of the dining-room, and are cut off from the portion of the lodging house devoted to lodgers. A great service has been rendered to housing questions by the magnificent efforts of Lord Rowton in the direction of common lodging-houses. His houses have the great recommendation of cheapness, and are models of cleanliness and comfort. The one just described closely follows the lines of the most recent Rowton Houses. Useful work in this connection has been done in Glasgow between 1868 and 1879, six lodging-houses for males and one for females having been erected. The charges are from 3½d. to 4½d. per night. The houses are built in a substantial manner, and each lodger has at least 400sq. ft. of space in the dormitories. Recreation, smoking, and dining-rooms are somewhat similar to those described in detail above. The women's lodging-house in Glasgow accommodated 125 very poor persons, mostly of the class known as charwomen, and even at the low rents charged there is a substantial profit on the undertaking. Glasgow has become the pioneer city in this particular part of housing work. The next slide shows a plan of a collective lodging-house devoted to the use of widowers with the maximum of three children. It is called a family home. It contains 160 single rooms each capable of accommodating one adult and three children; two cots are provided in each bedroom for the children. Each room is self-contained, lighted by electricity, heated by hot water, and plainly furnished. The children are cared for by the staff during the day. The establishment contains a large dining-hall, recreation room, kitchen, scullery, &c., on the ground floor, and there is a playground attached. The room adjoining the recreation-room, called the day nursery, was originally designed as an observation room for children suspected of infectious diseases. The home was opened in March, 1896. Save for slight trouble on one occasion with measles, there has been no need for this room to be used: it has been since devoted to a day nursery. It was designed to admit widows with children also at a charge per week of a shilling less than for widowers. I am convinced that this is one of the most earnest attempts which has been made for helping the very poor, who need to spend their limited income to the best advantage for themselves and their children. When I visited the establishment the nursery was well filled with infants from the age of two months, and the loving care with which they were treated by the staff employed by the corporation disarmed any criticism which might arise on realising that the effort is not a financial success. The loss appears to be about £500 a year, but the benefits obtained by transferring the children from their original surroundings to the comforts of this home amply compensate for the outlay. I am deeply indebted to Mr. A. B. McDonald and Mr. W. M. Morris for plans and other information furnished me from Glasgow. In conclusion, the lecturer showed and explained ten other slides, illustrating the internal fittings and arrangements of dwellings.

THE PRESENT CONDITION OF THE BUILDING INDUSTRY.

At the ordinary general meeting of the Surveyors' Institution held on Monday last, the discussion was resumed of Mr. Blashill's paper bearing the above title, and reported in our issue of March 2.

Mr. Howard Chatfield Clarke expressed an opinion that it would often be well if the em-

ployer, on whom the whole working of the machinery depended, would sometimes take the architect more fully into his confidence—as fully, for instance, as he would his solicitor. He quite agreed that it was one of the conditions of success in carrying out the work that the architect, having ascertained his client's wishes and fully thought out and completed his drawings and specification, should stick to these as closely as possible, although many persons would be interested in his not doing so. The architect should have the selection of the builders, for if this was left to the client it was impossible for an architect to work smoothly with a builder who was strange to his methods and requirements. Works were frequently delayed by using materials such as terracotta, the delivery of which was often deferred, to the annoyance and loss of everyone. He saw no object in making the quantities part of the contract, although they should be deposited as priced bills in case of variations. The question of subletting was an important one, and he thought the contractor should be careful to bind the sub-contractor to the same terms as he was bound to. The architect should have the selection of certain materials, but he should not put in more provisional sums than were absolutely necessary. Many of the disputes of which one heard or knew were occasioned by improper drawings and incomplete specifications. He thought that the architect, and not the quantity surveyor, should draw the specification. It was true that Osborne and many other very fine houses had been built from plans prepared in the contractor's office; but such a system, if generally pursued, would render very lax the checks on prices and materials. The most satisfactory plan was, he thought, a schedule of prices, which gave the client the best value for his outlay. There was, besides the class of speculating builders, another body of men who might be called financial architects, who took land at ridiculous ground rents, and by some financial scheming, succeeded in erecting buildings on it. These did much more harm than the ordinary speculating builder with regard to the labour question; but he was afraid, from what he could see, that the welfare of the many was being sacrificed to the good of the few. Whether increased facilities for education had resulted in any improvement in the workmen he did not know, but it was a matter which must be considered in looking to the future. Had technical education improved the work turned out? Could a painter, for instance, be left to himself to artistically finish a door, or must he be looked after at every point? There was a great opening for any workman or body of workmen in whom such confidence could be reposed. Better than all the technical schools he held the apprenticeship system to be. He had himself been apprenticed, as had most professional men and good craftsmen, and he could not think that the modern workman, by decreasing the number of skilled men, was helping to keep his trade flourishing. The trade-unions should seriously consider this. He knew of cases where fittings for doors, &c. were being imported by men who would gladly have used home-made work, and even of a case where a leading contractor seriously contemplated erecting works on the Continent in order to avoid labour troubles. Mr. Clarke then quoted a passage from Mr. W. Woodward's article in the current *Nineteenth Century*, showing how wages in all classes had risen by £115,000 per week in 1899, compared with £95,000 in 1898, and £45,000 in 1897, the rise during 1900 being about £150,000 per week. Were the mechanics better off? He held, in spite of what trade-unionists taught, that the only way to make trade flourish and increase were for the workmen, the contractor, the architect, and the employer to recognise the fact that they were all in the same boat, and must pull together.

Mr. H. Lovegrove said he agreed with Mr. Blashill that a clerk of works should be a man not selected by favour, but one on whom full reliance could be placed to act fairly between contractor and architect. Some clients, he feared, thought that directly a contract was signed it was quite legitimate to grind down the contractor in every possible way, as if he had no rights. In the case of sub-contracts, the builder should be careful to bind the sub-contractor by terms similar to those by which he was bound. It was quite true that the delayed delivery of certain materials was often a source of trouble—terracotta and ironwork being especially unsatisfactory in this respect. The practice of sub-contractors' commission to architects

was, of course, to be condemned in any case. It was obvious that the larger modern contractors could hardly be skilled craftsmen in the sense that their country brethren were, but they could always command the services of skilled assistants. Few people thought nowadays of the way in which a dwelling-house was built, so long as it was well decorated and finished attractively, and thus the speculating builder came in to do the work which could not be done under tenders. He agreed in deploring the decline of the apprenticeship system, and he doubted whether technical education, good as it was in its way, could ever produce the same class of craftsmen as the old plan turned out.

Mr. J. Randall said he held that, before a building was started, the drawings, specifications, and details should be in the quantity surveyor's hands, for without them it was impossible to give a satisfactory estimate. This was always done in the case of large Government contracts, with which he had had much to do, and the system applied also to smaller jobs. Many builders (his own firm among the number) now prepared their own steelwork, and so avoided another profit. Provisions were often not necessary. It was easy to ascertain the exact quantity of material required, say, for gasfittings, and so avoid unnecessary expense. As to technical education, he thought that a reversion to the system of apprenticeship would produce better results than the modern plan of teaching a man outside his workshop. The action of the trade-unions had made it almost impossible to get sub-contractors to agree to a contract without a "strike clause," and work went abroad in consequence.

Mr. C. John Mann wished to emphasise the value of careful preliminary estimates. The employer knew what he had to spend, and it was disappointing to everyone to find that the original estimate had been exceeded. As to quantities forming part of the contract, he thought that they should in every case be so carefully prepared that it mattered nothing whether they formed part of the contract or not. It would be hard to prevent a client from adding to or varying any part of the original plan because of the difficulty of adjusting accounts afterwards.

Mr. H. H. Bartlett feared that, while recognising the defects of the present system, Mr. Blashill saw no clear remedy for them. When a sub-contractor was selected by the architect, the contractor had very little hold over him, whether as to time or the manner of carrying out his work. He thought that in many cases the principal contractor might be allowed to make his own selection. His experience of technical education was that the ordinary British workman of to-day was not one degree more intelligent than his predecessor of thirty years ago. For the introduction of foreign materials the trade-unions were not alone to blame. Rent, rates, taxes, and outgoings were so much higher in this country than where, for instance, joinery was made, or where steel and iron girders were produced. He quite agreed that apprenticeship was the solution of at least one part of the difficulty. If there were no skilled men to carry on the work, it would be done abroad, or superseded by some other method. When trade was brisk, and masters must take whoever they could get, many men got on the books of the unions who were not really mechanics at all, and when the unions assured employers that they could find any number of mechanics required, these men were included among the number. It was not the written and printed rules of the unions of which employers complained. It was the unwritten law that a man should do only such or so much work, that he should lay only, for example, a certain number of bricks per day, that was tending so seriously to destroy trade, and deter capitalists from investing money in buildings.

Mr. H. R. Taylor, L.C.C., said that the author's reference to the good work in carpentry and masonry turned out 50 years ago showed that the men were allowed more time and better materials than at present, and as they began and finished their work they naturally took more interest in it. To-day wealth was increasing at a far greater rate than were wages. Wealth had doubled in 25 years, and the population in 50 years, but wages had certainly not doubled in 25 years. In comparing prices of brickwork it must be remembered that conditions varied considerably. The low prices quoted were probably for straightforward work in the open, not grouted or flushed up. Much of the increased cost was due to want of organisation on the part of the

builders themselves. If the unions forbade piece-work, or would not allow it to be done in the least possible time, this was merely the swing-back of the pendulum. He remembered when the policy of the employers was to grind out as much work for as little wage as possible, and this was the reaction. He challenged the statement that an unwritten law of the unions forbade more than a certain amount to be done. He was sure no such thing existed, with the knowledge of the unions. He did not believe in the union deciding what was one man's work and what another's. That was the employer's business; but if he put round men in square holes, he must suffer. He had never advocated a strike when a peaceful settlement was possible. The Employers' Liability Bill of 1880 gave a distinct impetus to sub-contracting, but matters were changed now. He agreed that apprenticeship was desirable, and if only masters and unions could meet, terms might easily be arranged. He believed that the workmen had distinctly advanced as their wages had risen, and he hoped to see still further advances. He suggested that most, if not all, of the men who were referred to by a previous speaker as loafing about on Mondays were not neglecting their work, but, having been stopped on Saturday, were in search of fresh work. He did not believe, either, that the work on a job was regulated by the pace of the slowest man. His experience was that the more expert helped the less capable.

Mr. William Woodward expressed some surprise at the mildness of the last speaker's remarks, but he seemed hardly convinced by his arguments. He asked whether Mr. Taylor could state as his honest conviction that there was no unwritten law limiting the number of bricks per day which a man might lay? That gentleman having replied by a decided negative, Mr. Woodward said he was astounded, for Mr. Taylor's positive statement was in direct opposition to his own absolute personal experience. He had the word of several builders that such a limit existed. The question of a fair day's work for a fair day's pay was one of contract entered into between employer and workman, and as binding on one as on the other. It would be no use for him as an architect to scamp his work because he did not consider the commission fair. He must either make new terms or carry out his contract. With regard to loitering on the works, he was astounded to hear that it did not exist, in face of the fact that he had repeatedly found men idling in groups on roofs and elsewhere, and had noticed that they did so openly, without even a pretence of returning to their work. The interference with each other's trades was not so small a matter as Mr. Taylor represented it to be. He knew of a case where a bricklayer had to stop work while a mason was brought from a distant part of the building to fix a small template, which he could just as well have laid. Again he remembered a strike caused by his refusal to allow bricklayers to lay a plain tiled roof which he wished done by proper tilers. In another case he found work stopped because on returning from the dinner hour one man was hopelessly drunk, and the clerk of works refused to admit him. The rest of the bricklayers struck, regardless of the fact that if the man had been allowed to work, the Employers' Liability Act would probably have involved the master in considerable loss. He differed from Mr. Clarke as to the quantities forming part of the contract.

The discussion was then adjourned, the chairman expressing a hope that those visitors who had been unable to speak on that occasion would attend the next meeting on the 25th inst. at 8 p.m.

ARCHITECTS' BENEVOLENT SOCIETY.

MR. WILLIAM EMERSON, the President of the Architects' Benevolent Society, took the chair at the annual general meeting, held in the rooms of the Royal Institute of British Architects on the 13th inst. The council state that, notwithstanding the many calls upon private benevolence during the period under review, the income has not only been maintained, but increased. The society's income, through the careful management of successive councils, has not been permitted to diminish; but, on the other hand, the financial progress has scarcely kept pace with the demands on the charity of the society. As a special effort was necessary to enable the council to carry on their work, the president, with the honorary secretary, undertook to issue a letter of appeal to members

of the profession in June last. In view of the large number—some five thousand architects—to whom the appeal was made, the result was scarcely as favourable as might have been anticipated; but it was successful in so far that it enabled the council to afford a larger measure of practical help where it was urgently needed than it would otherwise have been possible; the amount received or promised in new annual subscriptions being £98 9s. 6d., and in donations £151 17s. 0d., while the total cost of issuing the appeal was £38 8s. 8d. With reference to the society's Income account, the council desire to draw attention to the fact, notwithstanding that the amount received in subscriptions for the year was £522 0s. 6d., as compared with £469 3s. 0d. received in 1899, there was a balance at the debit of the account on December 31 of £12 11s. 11d. It is the first time in the history of the society that such a deficiency has occurred, and it is due to the large number of urgent applications for assistance which were considered and relieved. This bears eloquent testimony to the great need of the society for further support. It is hoped that the deficit may be promptly covered by the acquisition of a sufficient number of new annual subscribers. The number of applications for relief has been greater than in any previous year, being 55, as compared with 40 in 1899. The sum thus distributed was £677 13s., while £112 10s. was paid to pensioners, making the total sum expended in relief £790 3s. Two of the society's pensioners having died during the year, their places were filled by eligible and deserving applicants.

The President, in moving the adoption of the report, made an earnest appeal to members of the profession for further support.

Mr. J. MacVicar Anderson said that, in response to the appeal so eloquently made by the President, he would give a donation of £50; and, contingent on nine other architects contributing a like sum, he would increase the amount to £100. A cordial vote of thanks was accorded to the donor.

Subsequently Mr. John T. Christopher and Mr. George Inskipp each promised a donation of £25; and the president promised a donation of £50, subject to Mr. MacVicar Anderson's appeal being responded to.

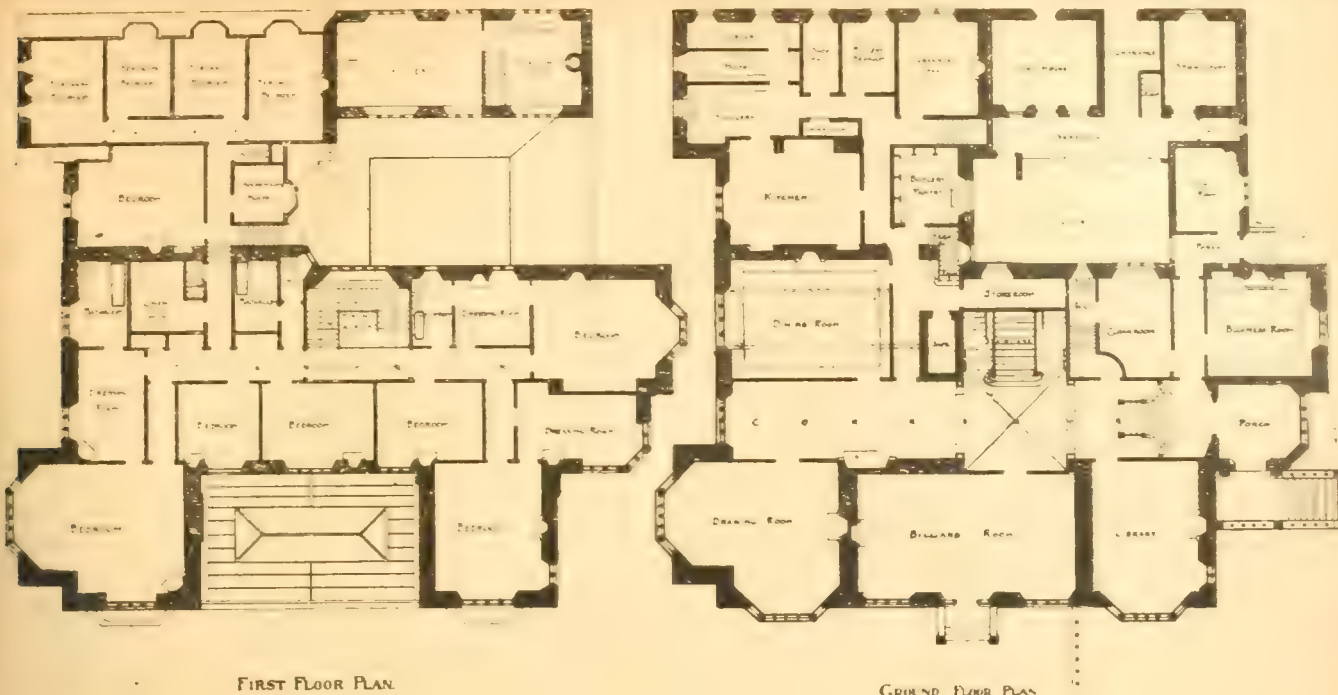
The council for the ensuing year of office was elected as follows:—

President, the President of the R.I.B.A., Mr. T. M. Rickman, Mr. R. A. Briggs, Mr. Arthur Cates, Mr. E. A. Gruning, Mr. G. T. Hine, Mr. Jeph. King, Mr. H. C. Boyes, Mr. G. Inskipp, Mr. J. T. Wimperis, Mr. Arthur Green, Mr. E. Monson, Mr. Sydney Smirke, Mr. H. L. Florence, Mr. Graham C. Awdry, Mr. J. T. Christopher, and Mr. G. H. Fellowes Prynne.

BOOKS RECEIVED.

Pure Water for London, by R. P. WHELLOCK, A.R.I.B.A. (London: Simpkin, Marshall, Hamilton, Kent, and Co., Ltd.), is a little brochure on a scheme for the supply of pure water for drinking and domestic purposes only to the County of London. Mr. Whellock has long been interested in the subject, and refers to the works of Mr. Joseph Prestwich, F.G.S., Mr. J. Swindell, M.R.I.B.A., and other writers whose researches in this direction are well known. The author thinks the vast subterranean storage of water below the London basin is both available and sufficient; for other than drinking purposes, the companies may still supply all that is required. The author's opinions have been shared by many others, who think that the deep chalk and deeper beds of greensands of the London basin give us the means of an adequate water supply. For this purpose Mr. Whellock proposes to penetrate the London clay, and tap the deeper springs some 400 to 900ft. deep now sealed in the chalk and greensand beds underlying the blue clay, especially the greensands of the home counties—Herts, Bucks, Surrey, Kent, and parts of Essex. We cannot follow the author into the details of his scheme, which is briefly "to construct 32 artesian wells arranged in a series of concentric zones having eight stations and wells to each, formed on radiating lines, say from St. Paul's, and two miles distant apart radially to the extent of eight miles, and so covering the whole of the County Council area." A plan of this distribution of wells is given. On the north, for instance, there is a well at Eimonton, another

at Hornsey, two miles nearer; another at Stamford Hill, another at Canonbury; on the south, in the same line, is one at Walworth, another at Herne Hill, another at Sydenham, and the last at Norwood, and so in other six directions or lines of radii. The plan is thought to be suitable to the present ratio of the population becoming more dense as the wells converge to the centre. It is estimated that these 32 wells will supply 42 millions of gallons. Provision is made for pumping this volume of water into storage tanks or reservoirs daily, and distributed through mains to the houses and public buildings. The present supplies of the companies will be devoted for manufacturing, street-watering, fire-extinguishing, flushing, and other purposes. The author estimates this scheme approximately at £3,140,000. Plans and elevation of one of the well stations and water towers and other views are given. The original drawings were exhibited at the Architectural Room of the Academy last year. The scheme, though not original, deserves notice as one of the numerous proposals for the water supply of London.—*The Essex Review* (Chelmsford: Tindall and Jarrold) contains an *in memoriam* notice with portrait of the late Eimund Durrant, the founder, managing director, and publisher of this excellent county quarterly. Other articles of interest are "Life on an Essex Farm Sixty Years Ago," a biography and portrait of D. M. Collier, the Essex historian, and an article by Gurney Benham on "Legends Connected with the Arms of Colchester."—*Troydon, New and Old* (London: St. Bride's Press) is a second and revised edition of one of the Homeland Handbooks, and is written by Edward A. Martin. It is illustrated by numerous process blocks, and contains a map of the district and a plan of the town.—*Bermondsey: its Historic Memories and Associations*. By EDWARD T. CLARKE (London: Elliot Stock).—This is an interesting narrative of a very prosaic district, though at one time the site of a Royal palace and the famous abbey of St. Saviour, the court of which monastery is now Bermondsey-square. This great monastic foundation has been called by Sir Walter Besant the "Westminster of South London." It was an interesting group of conventual buildings, according to the views given, and in the gorgeous pageant of the coronation of Anne Boleyn the Abbot of Bermondsey played a chief part as one of the most eminent personages. Bermondsey was an occasional residence also of the sovereigns, and the priors and abbots of the monastery were invested with great dignity. The earlier chapters of this interesting book give an account of the Benedictines and the early foundation of the monastery, its growing importance, and the illustrious noblemen who became monks, the chief of whom was William of Mortain, Earl of Cornwall, who died there. After the fall of the monastery a stately mansion was built on a part of the site by Sir Thomas Pope, and was called Bermondsey House, which afterwards became the residence of the famous Earl of Sussex. "Bermondsey House and its Occupants" forms two interesting chapters, and afterwards we have an account of "Modern Bermondsey: its Growth, its Leather Industry and Manufactures." Section II. describes the history of the ancient parish church and of St. Mary Magdalen, and many familiar names and associations are mentioned. The chapters dealing with the Middle Ages are derived from Dugdale and local antiquaries, and the author expresses his gratitude to the valuable assistance rendered by Mr. John Frowde, the librarian. A ground plan of the abbey from an original drawing in 1679, and many interesting local views of Jacob's Island, mentioned in "Oliver Twist" as the scene of Sikes's death; old stone houses in Grange-walk; the Leather Exchange, Jamaica House, St. Mary Magdalen (long since despoiled of its treasures by the avarice of Henry); the views of the north gatehouse and west gate of Bermondsey Abbey existing in 1777, of the conventual buildings demolished in 1805, and other relics are given, and attest the antiquity and importance of the district before modern Puritanism and commercialism banished the spirit and traditions of the past.—*Romen: its Cathedral and Churches*, by Rev. THOMAS PERKINS, F.R.A.S. Rector of Turnworth, Dorset: with Illustrations (London: George Bell and Sons).—This is the second of Bell's Handbooks to Continental Churches, and is profusely illustrated with many excellent photographs by the author. Mr. T. Perkins describes what he has seen during a visit to this city in May of last year, undertaken for the purpose of examining and photographing the chief churches there.



NEW MANSION HOUSE OF KILDRUMMY, ABERDEENSHIRE.—MR. A. MARSHALL MACKENZIE, A.R.S.A., Architect.

Other historical works have been consulted on the local antiquities. The cathedral church of Notre Dame is first described and illustrated, and the author compares it with the Benedictine church of St. Ouen, well-known to all architectural tourists as a most beautiful example of Gothic of the 14th century, and for the external unity of its parts, though the western and central portion exhibit Late Gothic or Flamboyant features. The western towers of the cathedral are said to be nearly as high as the central tower of Lincoln, and surpass any of the western towers in England; the central tower is spoilt by the cast-iron spire which makes it higher than any English spire; but we prefer to dwell on the architectural proportion, not the mere physical dimensions of these churches. Comparing them with English examples, Mr. Perkins says that the two French churches are each about equal in length to Salisbury, and that in proportion of length and breadth these two churches do not differ from Salisbury, which is a typical English example, but the nave of St. Ouen exceeds that of Westminster Abbey by a few feet. Again the proportion of height to width is greater than in the English example, as in most French cathedrals. St. Ouen stands on a fine site, and is open all round, while the cathedral is hemmed in by surrounding buildings, and a good general view is unobtainable. Internally, St. Ouen, as all visitors know, is harmonious and impressive; but its details are not so pleasing as those of Notre Dame. There is more repetition, while in the latter cathedral we are delighted by the greater variety. The church has "grown up," and has been added to and altered from age to age, as in our English cathedrals, and this makes it more interesting. Its monuments also are more numerous and pleasing. The beautiful Flamboyant church of St. Martin is also described and illustrated. Every part and feature of these three typical churches are treated, and the minor churches of Rouen are noticed. There are fifty illustrations, and the book is well printed, and bound in red, uniform with the other series.

Mr. E. K. Fisher, J.P., head of a well-known firm of land agents at Market Harborough, and agents for Lord Barnard, died on Friday at the age of 71.

Colonel A. J. Hepper, D.S.O., R.E., inspector of the Local Government Board, attended the town-hall, Kingsbridge, on Friday, for the purpose of inquiring into the subject of a petition by the Kingsbridge Urban District Council for power to acquire lands, other than by agreement, required by them for the purposes of water supply. There was no opposition.

NEW MANSION HOUSE OF KILDRUMMY, ABERDEENSHIRE.

THIS house has been built of a light cream-coloured sandstone found on the site. Within the purlieus are the ruins of one of the largest of Scottish castles, at one time belonged to King Robert I. Kildrummy is now the property of Mr. James Ogston, Aberdeen, and is a well-known sporting estate, situated in the upper valley of the Don. The architect is Mr. A. Marshall Mackenzie, A.R.S.A., Aberdeen. The plans show the internal arrangements of the building.

CHIPS.

Memorial-stones of new Sunday-schools to be erected in connection with the Robert Hall Memorial Chapel, Narborough-road, Leicester, were laid on Thursday in last week by the mayor. The buildings will accommodate about 800 children, and are to be built in a rapidly growing suburb.

Plans for the laying out of a new pleasure ground on Manor-road have been approved by the Scarborough Corporation. The estimated cost is £710.

The Kelso District Committee of the Roxburgh County Council have instructed Mr. Harry W. Taylor, A.M.I.C.E., of Newcastle-on-Tyne and Birmingham to report upon the water supply of Morebattle.

An auction sale took place at Newton, Malton, the other day, of the fittings of the disused church of St. Nicholas. The church, as it stood, was recently sold to the Newton Urban District Council for the small sum of £12, and they are about to make a public swimming-bath at the back of the churchyard, and have given £60 for the site, as well as the £12 for the fabric of the church itself. The sale of the oak fittings, &c., resulted in a total of £143 15s. being realised. The council's bargain includes a valuable lot of lead roofing, as well as a fine stained-glass window.

At the Leeds Town-hall, on Friday, Lieut.-Col. A. C. Smith, R.E., an inspector of the Local Government Board, conducted an inquiry with regard to the application of the corporation for sanction to borrow the sum of £77,062 for recreation-ground purposes; £3,853 for the purchase of land in York-road and Broad-lane, Bramley, as sites for the erection of public baths; £1,438 for the purpose of the town-hall and municipal buildings; and £409 for the purchase of land in Hough-lane, Bramley, as a site for a branch library.

A bust of the late Mr. D.puty Bedford, who rendered excellent service in the acquisition of Epping Forest for the free use of the public, was placed yesterday (Thursday) in the lobby at the Guildhall. The bust is the work of Mr. W. Merritt, and it is the first time that a Common Councilman has been thus honoured.

COMPETITIONS.

HULL.—The committee of the Royal Infirmary have received the report of the assessors (Messrs. Young and Hall) on the designs submitted in competition for the extensive alterations and additions to the above. They report that "The designs are all of high merit, and show that great care and thought have been expended upon them." First, Messrs. Worthington and Sons, Manchester, premium £100; second, Mr. H. Percy Adams, London, premium £50. The other competitors invited to send in designs were:—Messrs. Roger Smith and Son, London; Messrs. Simpson and Allen, London; Mr. W. A. Pite, London; Messrs. Botterill and Bilson, Hull; Mr. Jacobs' Hull; Messrs. Freeman, Son, and Gaskell, Hull.

STONKPORT INFIRMARY.—The committee have received the assessor's award on the designs submitted in this competition (for a 500-bed infirmary), and in accordance therewith have awarded the premiums as follows:—First premium (£150), Messrs. Giles, Gough, and Trollope, London; second premium (£100), Mr. H. Percy Adams, London; third premium (£50), Mr. C. Harvey, Liverpool. The competition was a limited one, seventeen architects being selected to compete.

THE NEW NORTH-WEST LONDON INSURANCE OFFICES.—With reference to the paragraph in last week's issue, stating that Mr. Mayston received a special premium of £50, we are requested to add that all the competitors received a premium (except the successful competitors, who are now instructed to carry out the work), the directors having from the first intended to recognise the labours of the unsuccessful candidates in that way, although not making it one of the conditions.

A new station on the London and Manchester main line of the Great Eastern Railway Co.'s system named Goodmayes, between Seven Kings and Chadwell Heath, was opened on the 8th ult. It opens up for suburban residential occupation a large area of which have hitherto been market-gardens and agricultural land, but will now doubtless be built over as rapidly as the Ilford and the Seven Kings neighbourhoods have been.

The death is announced of Professor Giuseppe Peggi, of Florence, Knight of the Civil Order of Savoy, who had been an hon. corr. member of the Royal Institute of British Architects since 1869.

The Scarborough Town Council adopted on Monday plans and estimates for the erection and furnishing of an infectious diseases hospital, at a cost of over £7,000. The hospital will contain 25 beds.

TO CORRESPONDENTS.

[We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.]

It is particularly requested that all drawings and all communications respecting illustrations or literary matter should be addressed to the EDITOR of the BUILDING NEWS, Clement's House, Clement's Inn Passage, Strand, W.C., and not to members of the staff by name. Delay is not unfrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

Cheques and Post-office Orders to be made payable to THE STRAND NEWSPAPER COMPANY, LIMITED.

NOTICE.

Bound copies of Vol. LXXIX are now ready, and should be ordered early (price 12s. each, by post 12s. 6d.), as only a limited number are done up. A few bound volumes of Vols. XXXIX, XLII, XLVI, XLIX, LI, LIII, LVIII, LXI, LXII, LXIII, LXV, LXVI, LXVII, LXVIII, LXIX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, LXXVII, and LXXVIII may still be obtained at the same price; all the other bound volumes are out of print. Most of the back numbers of former volumes are, however, to be had singly. Subscribers requiring any back numbers to complete volume just ended should order at once, as many of them soon run out of print.

Handsome Cloth Cases for Binding the BUILDING NEWS price 2s. post free 2s. 4d., can be obtained from any Newsagent, or from the Publisher, Clement's House, Clement's Inn Passage, Strand, London, W.C.

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ADVERTISEMENT CHARGES.

The charge for Competition and Contract Advertisements, Public Companies, and all official advertisements is 1s. per line of eight words, the first line counting as two, the minimum charge being 5s. for four lines.

The charge for Auctions, Land Sales, and Miscellaneous and Trade Advertisements (except Situation advertisements) is 6d. per line of eight words (the first line counting as two), the minimum charge being 4s. 6d. for 40 words. Special terms for series of more than six insertions can be ascertained on application to the Publisher.

Front-page Advertisements 2s. per line, and Paragraph Advertisements 1s. per line. No Front-page or Paragraph Advertisement inserted for less than 5s.

Advertisements for the current week must reach the office not later than 3 p.m. on Thursday. Front-page Advertisements and alterations in serial advertisements must reach the office by Tuesday morning to secure insertion.

SITUATIONS.

The charge for advertisements for "Situations Vacant" or "Situations Wanted" is ONE SHILLING FOR TWENTY-FOUR WORDS, and SIXPENCE for every eight words after. All Situation Advertisements must be prepaid.

RECEIVED. RAY, Son, and Co., Ltd.—A. B. Belfast.—J. A. M.—N. H.—F. A. R.—J. B.—N. C.

BOOKS.—1. No such articles have appeared of late in our pages. 2. No. The plates published in back numbers of the BUILDING NEWS cannot be obtained separately.

"BUILDING NEWS" DESIGNING CLUB.

DRAWINGS RECEIVED.—"Brutus," "Nemo."

Correspondence.

THE CEMENT COMBINATION.

To the Editor of the BUILDING NEWS.

SIR,—I should be much obliged if you could find room in your columns for the following correspondence which has passed between myself and the Associated Portland Cement Manufacturers (1900) Limited.—I am, &c.,

GEORGE E. WRAGGE, Hon. Sec.,

The London Association of Lime, Cement, and Brick Merchants, 47, Belvedere-road, Lambeth, S.E., March 13.

The Associated Portland Cement

Manufacturers (1900), Ltd.

3, Tokenhouse Buildings, King's Arms Yard,

London, E.C., Feb. 20, 1901.

GEORGE E. WRAGGE, Esq., Secretary, The London Association of Lime, Cement, and Brick Merchants, 47, Belvedere-road, S.E.

DEAR SIR,—I am instructed to reply to your favour of the 18th inst., and to point out with regard to the late Agreement between this Association and certain Cement Merchants, that the same was put an end to by mutual consent.

Almost from the date of its execution negotiations were in hand for certain modifications, owing to the Agreement being found unworkable in several respects; and during these negotiations I understand you, on more than one

occasion and in writing, expressed your personal wish that the agreement were at an end.

During the negotiations, owing to certain action taken by yourself and friends, counsel's opinion had to be taken on a point at issue, when the Directors of the Association received some unexpected advice as to the enforceability of this Agreement.

This was communicated to you at once—not with a view of determining the arrangements between this Association and the Merchants, or of putting pressure on you and your friends but with the view of hastening the negotiations for a modification of that Agreement, as the advice received from counsel greatly increased the then existing difficulties.

My Directors from the first expressed a desire to loyally work with the Merchants on mutually advantageous terms. But seeing that you had already expressed your wish for an end to the Agreement, they were not surprised at your hasty resolution to terminate the Agreement, and as you had so strongly expressed yourself that under no circumstances would you continue negotiations for the necessary modifications thereof, my Directors acceded to your views and the Agreement was terminated. Surely, we are right in saying "by mutual consent."

My Directors regret that your committee should have taken up the line they have in reply to a communication from themselves, which should have gone far to show that we were desirous of working on a friendly footing with your Association.

My Directors, however, trust you will continue to send us copies of your price lists from time to time, as it will be our endeavour to adhere to your prices and to co-operate with you as far as we possibly can.—Yours, faithfully,

(Signed) ALFRED STEVENS, Secretary.

February 26, 1901.

DEAR SIR.—I have to acknowledge your letter of the 20th inst. It gives no reply to the questions which, as instructed by my Committee, I asked in my letter of the 18th inst. On the other hand, you point out, and in several paragraphs attempt to prove, in order, I presume, to try and justify your position, that the late Agreement between your Company and certain Cement Merchants was put an end to by mutual consent. In reply, I have to say that this is absolutely incorrect. In my letter of January 25 I said: "They (i.e., the merchants) have always been willing to carry it out, and it is the manufacturers who now put an end to it"; and, in conclusion, I go on to state that "they (i.e., the merchants) have, after due consideration, decided to accept, under protest, the position taken up by your Company."

In my letter of the 1st inst., in reply to yours of the 29th ult., in which you stated, "and my Directors understand that by mutual consent," I stated, "the Agreement between the Associated Portland Cement Manufacturers (1900), Ltd., and Broad and Co., Ltd., and others, is at an end." My letter of the 25th ult., however, clearly points out that as far as the merchants are concerned, it is not at an end. I do not think that can be construed into "by mutual consent." The merchants have always been anxious to carry the Agreement out.

I repeat the merchants have always been anxious to carry the Agreement out. The position taken up by them was that the Agreement contained the terms as settled on behalf of your Company by Mr. O'Hagan, and on behalf of the Merchants by myself, on which the cement merchants of London would take their cement from your Company and on which your Company would supply them. The merchants were always willing to carry out these terms, and it was only the position taken up by your Company that put an end to the Agreement.

On Jan. 25 Mr. O'Hagan informed me that your Board considered that the Agreement was not enforceable, and that, as far as they were concerned, it was at an end.

The position as I understood it, taken up by your Company was that they considered that under sec. 26 of the Trades Union Act (1876) Trades Union, which meant "any combination" between masters and masters, or for imposing restrictive conditions on the conduct of any trade or business applied to the Agreement, and that therefore it was not enforceable by any of the parties. If that view were correct no modification of the Agreement would get over the difficulty. At the same time, and this is the strong point of the merchants upon which they feel most bitterly—it could not affect the honourable understanding upon which the manufacturers were to supply the merchants with cement on the terms agreed by Mr. O'Hagan and myself.

When these views as to the Agreement not being enforceable were in the first place communicated to me by Mr. O'Hagan and Mr. Brooks, it is true certain suggestions were made on behalf of your Company, but they were not suggestions for a modification of the Agreement, or suggestions to get over the legal difficulty raised by your Company; they were proposals for new terms upon which the Merchants should be supplied. I declined to discuss them, for the reason which I have always held—viz., that the terms had been already settled.

If your Directors "from the first expressed a desire to loyally work with the Merchants on mutually advantageous terms," I can only say that they have proceeded in a most peculiar manner. From the very first difficulties were created, our reasonable requests refused, our advice rejected. In my letter of Nov. 30 I protested against the action taken by the Manufacturers, and in conclusion said: "I do not complain. I only think it fair, in justice to myself, to place these views on record. The responsibility must now rest with the Manufacturers. In my opinion, the result will be that the Agreement will be practically valueless to us Merchants, and I am afraid, of very little good to the Manufacturers."

With regard to your remark as to the "hasty resolution to terminate the Agreement," I would point out to you that it was on Jan. 3 that I was informed of the position taken up by your Company, and that it was not until Jan. 25, after repeated interviews with representatives of your Company and consultations with counsel, and only upon being told that the Agreement was considered at an end by your Board that the Merchants decided upon their position.

I am always anxious to keep personal matter out of any controversy, but I must protest against your understanding that I on more than one occasion, and in writing, expressed my wish that the Agreement was at an end. On the contrary, I have done my best in every way—and it has been admitted—to carry the Agreement out, and it

is a very bitter disappointment to me that all my efforts have failed. I never conceived that your Board would take advantage of a clause in the Trades Union Act to put an end to an Agreement the terms of which I believed the Manufacturers would carry out, and which I was certain the Merchants would.—Yours faithfully,

(Signed) GEORGE E. WRAGGE, Hon. Secretary.
Alfred Stevens, Esq., Secretary.
The Associated Portland Cement Manufacturers (1900), Ltd.

The Associated Portland Cement

Manufacturers (1900), Ltd.

3, Tokenhouse Buildings, King's Arms Yard, E.C.

March 6th, 1901.

GEORGE E. WRAGGE, Esq., Hon. Secretary,
The London Association of Lime, Cement,
and Brick Merchants, 47, Belvedere-road,
Lambeth.

DEAR SIR.—I am directed to reply to your letter of the 26th of February, and to inform you that as the suggestions contained in my letter to you of the 31st of January were not accepted in the same friendly spirit by which they were prompted, my Directors did not feel called upon to enter into any definite and binding Agreement as to the future conduct of their trade. So long as they continue to receive the custom of a large number of the members of your Association, as they are now doing, they consider it the right policy not to extend their retail trade, but so far as possible to keep a uniformity in prices. They would therefore be obliged by your continuing to supply them from time to time with your price list, in the same manner as certain of the firms we have taken over received that courtesy in the past.

With regard to the references contained in your letter as to the termination of the Agreement, my Directors thought it right to send a copy of your letter to Mr. O'Hagan, who is in the South of France, and they adopt his reply, which they have just received, as follows:—

"March 5th, 1901.

"ALFRED STEVENS, Esq.

"MY DEAR SIR.—Having read Mr. Wragge's letter to you of the 26th Feb., I feel bound to write pointing out that I put a different construction altogether upon recent events, and in many respects I entirely disagree with the version put forward by him.

"It is true that on more than one occasion at my interviews with Mr. Wragge, I agreed with him that if it should turn out that the Agreement with the Merchants was not enforceable, then the Manufacturers could not work under it without certain modifications which were at that time under discussion. But where we differed was in this: that I suggested we should at once 'test' the question at issue and get it decided, making meanwhile arrangements providing (in the event of its being held that the Manufacturers had not the right to enforce the obligations against the Merchants) for the carrying out of a working arrangement as near to the original Agreement as possible, having regard to the position of the parties. While, on the other hand, Mr. Wragge would not listen to any such suggestions, saying that if the Agreement was not enforceable, then it should be ended, and the Manufacturers should have the hostility of the whole of the London Merchants—a threat which I considered quite uncalculated for, and which elicited from me the remark that he was treating the whole matter more like a 'naughty boy' than as a 'serious business man.'

"It is not correct for Mr. Wragge to say that I, acting on your behalf, told him that as the Agreement was not enforceable as far as you were concerned it was at an end. Previous to Mr. Wragge's committee considering the matter when they decided to end the Agreement under protest (whatever that may mean), he called upon me, told me his meeting would take place that afternoon, and wished to know what position the manufacturers took up. I repeated that we ought to get a test case when, if it was held that the Agreement was enforceable, the manufacturers would loyally act up to every letter of the Agreement. On the other hand, if it were decided that the manufacturers were unable to enforce the provisions of the Agreement against the merchants particularly in regard to:—

"1. The obligation of all the merchants to purchase only from the manufacturers for a term of seven years.

"2. The guarantee to take at least 150,000 tons in each and every year, of which, as I pointed out, only about 10,000 tons had been taken in the first five months, showing that there would probably be a heavy liability upon the guarantors at the end of the first year.

"I said if these provisions were not enforceable by the manufacturers, then without the removal of some restrictive clauses in the Agreement (which, while of but little benefit to the merchants, were pressing hardly on the manufacturers) it could not be expected that the manufacturers should act up to the letter of the Agreement; but I repeatedly stated that it would be your desire even then to act up to the spirit of it. But there would have to be a little 'give and take,' so that the Agreement should not tell unfairly upon the manufacturers.

"Again and again I impressed upon Mr. Wragge that you were most anxious to keep faith with the merchants, and to help him in every reasonable way in the object he had in view—viz., to bring about a 'united front' amongst the London cement merchants. I pointed out that in the event of the Agreement being held to be unenforceable, he and I would find no difficulty in agreeing upon satisfactory terms, which should put an end to the impasse, prove of mutual advantage to both manufacturers and merchants, and put him in a position to command the retail trade.

"My opinion is, however, that Mr. Wragge had then fully realised that the task he had set himself to control the retail trade was hopeless, as many merchants had allowed personal feeling to override the business advantages, and thus it was that Mr. Wragge would listen to no reason. He fully showed his hand when, to my surprise, he said: 'Well, suppose at our meeting this afternoon we decide to end the Agreement, will the manufacturers endeavour to hold us to it?' I replied that if it should be the desire of the merchants to put an end to the Agreement, I was sure the manufacturers would not object, as an unenforceable Agreement would be of but little use to them. He then said: 'Will I understand we shall not be accused of breach of honour if we act in this manner,' to which I replied, 'Certainly not.'

"That is my recollection of the interview, and I immediately reported to you that, in my opinion, Mr. Wragge meant to advise his colleagues to terminate the agreement. You were, therefore, not much surprised the next day when you received notification of the decision of his committee.

"I believe the object of that interview was to satisfy himself that if his committee wished to terminate the agreement, they would be safe in so doing. Certainly I never threatened that you would put an end to the Agreement. I know it could only be done by mutual consent, and after all my labours to bring about a satisfactory Agreement between manufacturers and merchants, I was far too anxious to have the full benefits of the Agreement, or some modification thereof to be secured to both parties.

"My flag has always been the same—viz., to put the trade upon a fair and proper footing. The manufacturers must enter into close relations with the retail trade, and see that its interests are properly protected. It was, therefore, to me a sad blow when the Agreement was terminated, and Mr. Wragge declined to accept or consider any terms which you were prepared to offer.

"That Mr. Wragge was for some months in earnest in his desire to carry out the objects of the Agreement, and that he worked loyally to that end I have no manner of doubt; but that he sickened of the whole affair when he found that by his own manner of proceeding and by his want of popularity with certain sections, he failed to get in the bulk of the merchants, I am equally certain. Probably by this time also, Mr. Wragge had discovered that while he could rule the majority of his colleagues with a 'rod of iron,' he utterly failed to dictate his measures to the Manufacturers when they felt that such dictation was not of mutual interest. Another probability for a desire to terminate the Agreement may have been the fact that if the Agreement was enforceable, there may have come a serious liability upon the guarantors of the 150,000 tons of cement during the first year, seeing that only 10,000 tons had been taken in five months. The realisation of this might have caused a little flutter of excitement, especially when it was raised, as I pointed out to Mr. Wragge, that outside merchants were getting their cement on the same terms without any obligations or undertakings.

"If none of the above matters played a part in actuating Mr. Wragge to take up his extraordinary position, then I am at a loss to account for his motives, and I can only say that his subsequent attacks on the Company in the Press disgusted me, for they were more like the actions of a stock-jobbing speculator trying to depress the value of your securities than of a man interested in keeping up goodwill in the cement trade.

"I cannot close this letter without repeating what I have never failed to state. That the attempt by Mr. Wragge to fasten on the manufacturers the imputation of their being guilty of any breach of faith was entirely unworthy of Mr. Wragge, and can only have been made for the purpose of covering up the real cause of the failure of the whole of the wholesale and retail arrangements."

"If the recent actions of Mr. Wragge are a sample of his general conduct of business, I can well understand his unpopularity in some quarters—I am, dear Sirs, faithfully yours, Signed, ALFRED STEVENS, Secretary.

Further, I am directed to say that it is a matter of regret to my Directors that our friendly relations were so abruptly terminated.—Yours faithfully,

Signed, ALFRED STEVENS, Secretary.

March 13.

DEAR SIR,—I have to acknowledge the receipt of yours of the 6th inst. I do not think that any good can be done by continuing the correspondence. It can only lead to further friction, and, as a consequence, cause greater disorganisation in the cement trade than exists at the present time. It is to my interest, representing my firm, and it is my duty, holding the position of hon. secretary of the London Association of Lime, Cement, and Brick Merchants, to do everything in my power to ameliorate, if possible, the present disastrous condition that that trade is now in. I will, therefore, close at any rate my part of the correspondence by restating as briefly as possible the position which I have always maintained.

1. The Agreement between the manufacturers and the merchants was in force and acted upon by both sides from August, 1890, to January, 1901.

2. That agreement was the basis settled by Mr. O'Hagan and myself, on which the Merchants were to be supplied with cement by your Company at the termination of their then existing contracts (see clause 34).

3. On Jan. 9 Mr. O'Hagan and Mr. Brooks informed me at an interview that your Directors were advised that the Agreement was not enforceable (see my letter of Jan. 10 and your reply of the 12th).

4. The Merchants thereupon took steps to obtain the very best advice, and on Jan. 17 Mr. Burt and I, on their behalf, saw Mr. O'Hagan, and informed him that the Merchants were advised that the Agreement was enforceable, and that they intended to enforce it, so much so that we left with Mr. O'Hagan a notice signed by the three Merchant Members of the Joint Committee to put in force Clause 34 of the Agreement. At that interview, at Mr. O'Hagan's suggestion, Mr. Burt and I agreed that there should be a meeting between counsel for your Company and counsel for the Merchants. If our counsel converted yours, your Company would recognise their position; on the other hand, the Merchants would know where they would be.

5. The conference was held. Counsel for your Company contended that the Agreement was not enforceable, and counsel for the Merchants contended that it was.

6. On January 25 I wrote Mr. O'Hagan as follows:—

"MR. DEAR SIR.—I have a special meeting of the Merchants this afternoon, and it is important that I should be in a position to report to them whether the Manufacturers have been converted by Mr. Swinfen Eady that the Agreement is valid and enforceable, and the Merchants' Association legal. Perhaps you will let me have a reply by bearer.—Yours faithfully, Signed, GEORGE E. WRAGGE, Esq."

To H. O. O'Hagan, Esq."

To which I received the following reply:—

"January 25, 1901.

"DEAR MR. WRAGGE.—I have your letter of this date. I am afraid that the opinions and explanations made by

Mr. Swinfen Eady, although very interesting as showing what his case is, did not in any way convince Mr. Kirby, or in any way shake his opinion already given. He regarded Mr. Swinfen Eady's argument as wide of the mark. I think nothing short of a test case can put matters in a satisfactory position.—Yours very truly, H. OSBORNE O'HAGAN."

"To George E. Wragge, Esq."

7. As Mr. O'Hagan's letter seemed to me to be somewhat indefinite, I called upon him specially that afternoon before the meeting of the merchants, and Mr. O'Hagan stated to me—I took it down from his own lips—that I might take it that your Board considered the Agreement was not enforceable, and that the merchants were not prepared to carry it out.

8. This has never been repudiated by your Company.

9. The Agreement was therefore not put an end to by the Merchants, but by the Manufacturers. The Merchants have always been willing to carry it out.

10. With reference to the second part of your letter incorporating Mr. O'Hagan's letter of March 5th, I must respectfully decline to indulge in personalities. I have dealt with the controversy all through as being a matter of principle, and prefer so to treat it. It is, of course, quite open to Mr. O'Hagan to express his opinion of me in what terms he thinks fit, and to impute to me whatever motives he thinks proper. I am, however, very sorry that your Directors have thought fit to adopt his letter.

I am quite content to leave my character and my conduct of the negotiations between your Company and the Merchants to the judgment of the trade with which I have been connected for so long, and in order that they shall have a full and perfect means of passing such judgment, I purpose making the following public.

In conclusion, I can only again express my great regret at the termination of the friendly and close relations between your Company and the Merchants.—Yours faithfully, GEORGE E. WRAGGE, Hon. Secretary.

Alfred Stevens, Esq., Secretary.
Associated Portland Cement Manufacturers (1900), Ltd.

LEGAL INTELLIGENCE.

WHAT IS "BLUE LIAS LIME"?—The adjourned hearing of the summons issued at the instance of Alfred Andrews, of the Blue Lias Lime-Burners' Association, Midway Wharf, Grosvenor-road, Putney, against the Cam Portland Cement Co., Limited, Meldreth, Royston, Cambridge, under the Merchandise Marks Act, was resumed before Mr. Horace Smith at the Westminster Police-court on Wednesday. The summons charges the defendants with 'unlawfully and with intent to defraud applying or causing to be applied to certain goods—namely, four tons of ground hydraulic lime not being blue lias lime, a false trade description as to the place in which the said goods were produced, the mode of producing the same, and the material of which the same were composed, whereby the said goods were falsely described as being Ground Blue Lias Hydraulic Lime, contrary to the provisions of the Merchandise Marks Act, 1887." Mr. Willis, barrister, again appeared for the prosecution, and Mr. Horace Avory, K.C., defended. Henry Preston Hart, of Cambridge, manager to the defendant company, said he had been connected with the cement and lime trade in Cambridgeshire for 15 years past. It was within his knowledge that hydraulic lime which set and hardened in water had been made in that county and sold as "blue lias lime" for the last 16 years or 17 years. Lime of that kind had been manufactured and sold as "blue lias lime" by the defendant company. This lime was manufactured from a natural deposit of stone or rock containing a large proportion of silica, and was consequently hydraulic in its nature. It had been accepted in the building trade generally as a "blue lias lime." No complaint had been lodged against the company until a letter was received from the complainants' solicitors in June of last year. The defendant company's lime was sold at from 2s. to 3s. less per ton than that of complainants. Witness's lime was manufactured by burning the stone in its natural state without adding any other material to it. Witness did not know that it signified lime from the Lias district, as understood by geologists. Witness further knew that lime could be made from Lias rock which was not hydraulic—indeed, it varied considerably. Witness had obtained samples of this lias lime from Lyme Regis, and also from Uplyme, Dorset, and from Tolsis, near Axminster, which were submitted to Mr. Dibdin for analysis. Witness had also obtained from Mr. Lawford a sample of blue lias lime, from Messrs. Greaves and Co., and also a sample from Messrs. Nelson and Co. These were also handed to Mr. Dibdin, together with a fair sample of the Cam Company's lime, taken from the bulk in the kiln, and a sample of clunch. In July last witness sent samples of blue lias lime from Ellis and Son, Barrow-on-Soar, Nelson, and Greaves, to Mr. Knight, of Cambridge. Cross-examined: Had not heard particularly of the blue lias lime formation until June last, and still more since this case was commenced. Witness was not a geologist; he did not term the stone in Cambridgeshire "blue lias limestone," but he called the product "blue lias lime." Witness had known that for years past he had produced this blue lias lime from 2s. to 3s. per ton cheaper than that from Warwickshire. Had not read any books on building materials, and therefore could produce no works or authority that defined

Cambridgeshire as blue lias lime. Only on one occasion, nearly a year ago, had he seen a warning in a building journal that persons were selling as blue lias lime a material that did not come from the lias formation. That produced no impression on witness's mind that his description was objected to, as for 15 or 16 years he had sold Cambridgeshire lime as "blue lias." There were two kinds of lime, easily distinguished from each other, made in Cambridgeshire—one produced by burning limestone, the other from clunch. The one sold by witness's company resembled that from Warwickshire—indeed, architects would find it difficult to distinguish it from the Warwickshire quality, which was 2s. or 3s. per ton dearer. Witness's company only made from one material—a limestone—and did not use clunch at all. Witness had had on several occasions samples of limes from other places to subject them to tests for tensile strength, for comparison with that made by witness. Witness had had lime returned on one occasion as too slow-setting, but on investigation he found too much sand had been added by the builder; besides which, the weather was very wet. On retesting the neat stuff it proved to be of very good tensile strength. Witness supposed that lias lime was 2s. a ton cheaper in the London markets than the Warwickshire limes because the Cambridgeshire carriage rates were less; but he could not tell that the same merchants bought in both districts. Witness put on his invoices, "ground blue lias hydraulic lime," to show that the output was hydraulic in character, for in early years, 15 or 16 years ago, it was not generally understood that the Cambridgeshire lime was hydraulic. Witness knew of lime-burners in Cambridgeshire, including the Royston Co., the late Standard Portland Cement Lime Co., in whose employ witness formerly was, who had for years sold hydraulic lime as blue lias lime; the witness could only account for the evidence given for complainants by Messrs. Swann Brothers and by Mr. Reading, Cambridge lime-burners, to the effect that they did not sell their product as blue lias lime, on the ground that they used the clunch already referred to.—Re-examined: Witness's firm had used for ten years the same headlines on circulars and on business cards "Cam Portland Cement Company, manufacturers of Portland cement and blue lias lime, Meldreth, Cambs." Witness's bags were about the jobs where work was going on. As to the difference in price, as a fact Messrs. Nelson and Co. and Messrs. Greaves, Bull, Lakin, and Co. were both much older than witness's company. William Joseph Dibdin, analytical chemist of 25 years' standing, and for 15 years chief analytical chemist to the Metropolitan Board of Works and the London County Council. The expression "blue lias lime," as used in the trade, signified a thoroughly good, sound hydraulic lime, and, until this case arose, witness never heard it restricted to any one formation or locality; witness regarded it as a generic term. Witness had examined the product of defendants' company, and also a sample of their natural material. Witness would have passed the product as from blue lias lime. Witness had tested it, and found it hydraulic and slow-setting. Witness received, at the same time, from the last witness, Mr. Hart, samples of lime from Greaves and Co. and Nelson and Co., and a sample of the Cambridgeshire clunch (also produced). It would be impossible to make hydraulic lime from the clunch, which was a "fat" lime. In Greaves' sample witness found 10.58 per cent. of soluble silica; in the Cam (defendants'), 15.15 per cent.; and in Nelson's, 11.63 per cent. Of lime, in Greaves' sample, 64.29; in defendants' sample, 64.97; and in Nelson's, 50.92 per cent., showing that the Cam sample was a better hydraulic lime than that from Greaves or Nelson. Witness would still pass defendant's sample as a blue lias lime of excellent quality. A letter from Stanger and Blount, the witnesses for the complainants, dealt with a typical sample of blue lias lime. The silica should be, according to that report, of which witness had not heard till after his own report had been sent in, 15 per cent., and the lime 65 per cent., showing an almost ridiculous concurrence with defendants' sample. Witness always judged in analysing mortars for the London County Council, that the proportion of lime should vary from 65 to 70 per cent. Witness experimented on the slaking properties of defendants' lime, and found that it slaked very slowly. An ordinary chalk lime would rapidly slake, and would produce a "cauliflower head." Witness also analysed for the witness, Mr. Hart, samples of limes stated to come from Lyme Regis, Uplyme, and Tolsis, and found that they varied in composition very greatly—from 64 to 91 per cent. of lime; in the last sample there was only 1.16 per cent. of soluble silica, and witness would have unhesitatingly rejected it as too fat. Witness also tested the defendants' lime and the other two makes for tensile strength. After six days' rest, defendants' sample was just midway between those of Messrs. Nelson and Messrs. Greaves, but witness regarded the time allowed as unduly short. Defendants' sample was a slower-setting cement than the other two. Cross-examined: Witness made for

the County Council, in company with Mr. Blashill, the chief architect, numerous analyses of cements and other building materials before the present London Building Act of 1894 was framed. Witness always regarded the term "blue lias lime" like the name "Portland cement," as supplying a particular quality, rather than as denoting material from the liassic formation. Probably some architects and engineers insisted on lime from the lias formation, just as many insisted on a certain brand of cement or lime. Witness had just published a work on "Limes, Mortars, and Cements," and on page 8 witness showed the quality of certain limestones in a table, in which the Cambridgeshire lime was not specified as hydraulic. Witness regarded the term "blue lias lime" as indicative of quality and not of origin of locality; "lias stone" was from a particular geological formation, and from that formation it was possible to get a stone which was not hydraulic. Witness was exceedingly glad that the book had been produced, for it had only just been published, and it did not distinguish in detail points which had come out in the case. He hoped to bring out a second edition, in which the Cambridgeshire lime, to which his attention had now been called, would be included in the list of hydraulic limes, and he would also indicate the enormous difference apparent in the qualities and composition of stones from the blue lias formation. Witness knew of no authoritative statement as to the actual percentage of lime and silica that should characterise a typical blue lias lime.—Re-examined: A specification demanding "blue lias lime" would not be complied with by such samples as those from Lyme Regis or Uplyme, which had been sent to him for analysis. James West Knights, F.I.C., analytical chemist to the corporation of Cambridge, and a director of the defendant company since its formation, said in witness's experience the term "blue lias lime" signified in the building trades a lime containing a considerable quantity of alumina and silica, sufficient to render it hydraulic, and had no reference to the place from which it came. It included lime from the liassic formation, but did not exclude others of like quality. Cambridgeshire lime had been known as "blue lias." In 1883 witness took samples from a quarry at Baddington, a mile or so from Meldreth, for the late Mr. Prime, and examined other samples for Mr. Prime's manufactured material which was sold as "blue lias." Witness's view was somewhat lower as to the percentage of lime and higher in silica than the witnesses already examined, as the constituents of the highest quality of hydraulic lime; in a sample of their lime examined for defendant's some time back he found 58.6 per cent. of lime and 28 per cent. of silica. Witness last year tested samples of lime from defendants, Messrs. Ellis, Messrs. Greaves, and Messrs. Nelson, for tensile strength, and found that after three months defendant's sample bore the greatest strain, and Messrs. Nelson's came next. The defendant's sample was the slowest-setting of those submitted. Cross-examined: Witness would call any carboniferous limestone which set under water blue lias. It was impossible to tell, apart from information as to its origin, the geological formation from which a given limestone was derived. Witness had never made a building contract himself, but he had been largely consulted by builders and architects as to building materials, and knew the trade names under which samples were submitted to him. For some years between 1884 and 1891, witness made weekly analyses of the Baddington lime and saw the manufactured material made up in bags labelled "blue lias lime." That business was now known as the Ruyton Company. Several other local makers had for years been selling hydraulic lime, but witness could not say under what name they were sold. Witness could not recollect any book of authority used by architects or builders in which witness's definition of "blue lias lime" was used; the reason was that in nearly all authoritative works the material was termed "hydraulic" and not "blue lias" lime. To the magistrate: On the Cam Co.'s invoices the terms "blue lias hydraulic lime" was used, the first being the trade, the second the scientific title of the material. Re-examined: "Hydraulic" lime might be only slightly slow-setting; "blue lias" meant perfectly slow-setting. From the label produced he saw that John Ellis and Co., of Barrow-on-Soar, called their material "blue lias hydraulic lime." Until this case was raised witness never heard that the Company's product was sold under a false trade description. Charles Riley, F.R.I.B.A., of St. Swinith's-lane, E.C., for twenty-seven years past architect to the Drapers' Co., said in his experience "blue lias lime" simply meant "hydraulic lime." Witness had never associated it with stone exclusively from the liassic formation. Witness would pass hydraulic lime as such, although he knew it had not been derived from that formation, nor would he pass lime from the liassic beds which did not pass the requisite tests as to hydraulicity. Cross-examined: When witness did not use Portland Cement, as was invariably the case in the City, on account of its rapid setting, witness specified blue lias. To a large extent he had

practically discontinued the use of slow-setting lime; the last time was in the foundations of the People's Palace. Could not give an instance where he had used hydraulic lime which was not from the lias formation. Charles Stanley Peach, F.R.I.B.A., architect to the Westminster Electric Light Company, and to most of the electric-lighting companies, regarded "blue lias lime" as an eminently hydraulic lime, with no restriction as to locality of origin. The limes from the liassic formation varied very considerably in character. When good, blue lias lime should be slow and continuous in setting. When inspecting a building for a client, witness came across lime from the defendant company. Witness was struck with its behaviour, and had since used it frequently. He had specified it to be "blue lias lime from the Cam Company," and found it to be of excellent quality. Until this action was raised witness did not know that the defendant company's product was not derived from the lias formation.—Cross-examined: Knew of no definition in any textbook of blue lias lime, nor in an accurate specification was the unqualified term "blue lias lime" employed. Witness knew Rivington's "Notes on Building Materials." It was an elementary work, full of inaccuracies, although very interesting; it was certainly not an authoritative work. The term blue lias was as vaguely used as "whaling boards," which originally meant boards taken out of an old whaling ship, but for many years it had been laxly employed. At this stage the case was adjourned until Saturday (to-morrow) at 11.30 a.m.

WHAT IS A PRIVILEGED COMMUNICATION?—SABROVE V. HOLE.—An application was made on Friday in the Appeal Court by the defendant asking for judgment or new trial in an action for libel tried before Mr. Justice Ridley and a Common Jury, when judgment was entered for the plaintiff with £5 damages. The costs had since been taxed, and were returned at £140. Mr. Firminger, in support of the application, said the defendant desired to throw two shops into one, and he employed Mr. Webb, an architect. The contract was submitted to several builders, and it came to his knowledge that the quantities submitted to two of the builders were in excess of the amount which he thought was permissible. He, therefore, solely to save the builders wasting their time, sent a hurried postcard to each, saying the quantities submitted were incorrect, and would they come round to him and see the plans before making their tenders. The plaintiff, who was the person intrusted by Mr. Webb with the estimating of the quantities, said that these postcards reflected seriously on his business capacity, and although he was not named, the builders would, of course, know the statements on the postcards pointed at him. The trial ended as above stated, and the grounds of the appeal were that the communication on the postcard was incapable of being regarded as a libel at all; secondly, that the communication was privileged; and thirdly, that there was misdirection. Mr. Kemp, K.C., and Mr. Earle submitted that there was evidence to support the finding of the jury. The Master of the Rolls, on giving judgment, said the alleged libel was contained on a postcard from a building owner to a builder, and the point raised was unique. So far as material the libel was this:—"Quantities sent to you this morning by architect are entirely wrong." The question was whether that constituted a libel on the clerk of the architect, who was not named, but who came forward as the plaintiff in the action, and said that this statement was a libel on him as being the "quantities clerk" of the architect referred to in the document, and answerable for the correctness of the estimates. He could not say that the words were incapable of being a libel; but, in his opinion, they were written on a privileged occasion. It was suggested that the fact that they were written on a postcard and not sent in an envelope destroyed privilege. But plaintiff did not prove any publication of the postcard before it got into the hands of the builder. The circumstances being privileged, was the privilege destroyed by evidence of express malice? In his opinion there was none. For these reasons judgment would be entered for the defendant, with costs, here and below. The other Lords Justices concurred.

ROSEY V. YOUNG.—In the Chancery Division on Tuesday, Mr. Justice Farwell heard this action, in which the plaintiff, Frederick Howard Rosey, claimed an injunction to restrain the defendant, David William Young, from trading as a lime, cement, brick, and general builders' merchant under the name of "F. Rosey and Co.," or, in the alternative, an injunction to restrain the defendant from using the said name so as to cause confusion in the minds of customers of the plaintiff, and railway companies, and others. The plaintiff and his family had carried on for many years in London and elsewhere under the name of "Rosey" in different forms the business of lime, cement, brick, and general builders' merchants, and also the business of horticultural builders' merchants. The head office had for 30 years been at the Old Jamaica Wharf, Blackfriars, S.E., and amongst the branch

depots was one at 297, Kingland-road, N., where the plaintiff had for some time been carrying on the business alone under the title of "F. Rosey and Co." On May 12, 1897, the plaintiff entered into partnership with Stephen Ellis and Henry Charles Cooley, and it was agreed that the parties should carry on the business of lime, cement, brick, and general builders' merchants at 297, Kingland-road, and that the style of the partnership should be "F. Rosey and Co." By an agreement of August 17, 1899, the partnership, so far as the plaintiff was concerned, was dissolved, and it was provided that the share and interest of the plaintiff in the assets and goodwill of the partnership should be assigned to Ellis and Cooley, and that the plaintiff should not for 21 years carry on a similar business at or within half a mile of 297, Kingland-road, and that he should not trade, either directly or indirectly, under the style of "F. Rosey and Co." so long as Ellis and Cooley should continue to trade under that name, but that he should be at liberty to trade under any other style though similar. On November 16, 1899, the plaintiff assigned to Ellis and Cooley all his share and interest in the assets, business, and goodwill of the partnership absolutely. Since August, 1899, the plaintiff has continuously carried on the business of a lime, cement, brick, and general builders' merchant at the Old Jamaica Wharf as "F. H. Rosey and Co.," and the business of a horticultural builders' merchant as "F. Rosey and Co." Messrs. Ellis and Cooley conducted the business at 297, Kingland-road, until May 30, 1900, when they assigned the lease of the premises to the defendant, which assignment the defendant now alleged the parties executed in the belief that the goodwill of the business was included in it. By an indenture dated December 4, 1900, the goodwill of the business formerly carried on by them at 297, Kingland-road, was formally assigned to the defendant by Messrs. Ellis and Cooley. The plaintiff now contended that, on the proper construction of the agreement of August 7, 1899, by which the partnership was dissolved, Messrs. Ellis and Cooley were not entitled, on giving up the business, to dispose of the right to the name "F. Rosey and Co.," and, in the alternative, that the use of that name by the defendant created confusion in the minds of customers and railway companies, and thereby exposed the plaintiff to serious liability and damage. Evidence as to confusion, delay, and consequent loss was called. Mr. Butcher, K.C., for the plaintiff, on the point of exposure and liability to damage, referred to "Thynne v. Shore," "Chatteris v. Isaacson," "Borchell v. Wilde," "Chapel v. Griffiths," and "Levy v. Walker." Mr. Upjohn, K.C., for the defendant, was not called upon. Mr. Justice Farwell said no case had been cited by plaintiff's counsel which went anything like so far as the Court was now asked to go. "Chatteris v. Isaacson," perhaps, came nearest to the contention that Mr. Butcher had advanced; but it was still a long way off. The only proper ground of complaint would have been that what the defendant was doing amounted to a holding out that the plaintiff was his partner in business, so as to involve him in liability, and no attempt had been made to make out such a case. The plaintiff had assigned to use the name, and the defendant was using it legitimately. The action failed, and must be dismissed, with costs.

The governors of the general hospital at Tunbridge Wells have decided to invite open competition for plans for enlarging the institution to 76 beds, including a new children's ward, out-patients' department, operating theatre, and nurses' rooms.

The sub-committee of the Queen Victoria Memorial Committee met at St. James's Palace on Monday, when there were present Viscount Esher, Lord Windsor, Major-General Sir Arthur Ellis, Sir Edward Poynter, President R.A., Mr. A. B. Freeman Mitford, Mr. William Emerson, President of the Royal Institute of British Architects, and Mr. Sydney Colvin. The sub-committee agreed to a report, which has been submitted to the King and to the general committee.

Mr. A. P. Trotter, of the Board of Trade, officially inspected on Friday the electrical equipment of the new east-end route and of the Perth-road extension of Dundee Corporation Tramways. Some time ago Colonel Dunlop examined the permanent way and found everything satisfactory.

In the case of the application on behalf of Francis Thomas Verity, of Sackville-street, Piccadilly, W., late of Burnham Abbey, Burnham, Bucks, architect, a discharge from bankruptcy has been conditionally granted.

An inquiry was held on Friday at the Town-hall, Burnham, Somerset, by Mr. M. K. North, A.M.I.C.E., representing the Local Government Board, into a proposal by the Burnham Urban District Council to borrow £1,200 for the purpose of erecting new shelters, bandstand, and lavatories on the sea front.

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Our Illustrations.

GUIDES FOR THE SWANSEA HARBOUR TRUST.

The plans and view illustrate the design which was placed first among 97 competitors in the recent competition for this building, the first premium being awarded to the author, Mr. Edwin Seward, F.R.I.B.A., of Cardiff, by the assessor, Mr. W. M. Fawcett, M.A., of Cambridge. The work is to be carried out in red brick, with dressings of local stone and slate roofs.

NEW MANSION HOUSE OF KILDRUMNY, ABERDEENSHIRE.

For description and ground-floor plan, see page 363.)

CHURCH CATHEDRAL CHOIR STALLS: PLAN AND GENERAL DRAWINGS.

SITUATED in an edifice which is not one of the most attractive of English cathedrals, these fine examples of English woodwork, excelled only by the famous stalls at Lincoln, have some beautiful carving and interesting misericordes, and are in excellent preservation. The drawing is by Mr. James McLachlan, the Pugin Student for 1900.

THE GRISSELL GOLD MEDAL DESIGN FOR A BRIDGE.

THE design is for a timber bridge, by Mr. Edwin Forbes, who was awarded the R.I.B.A. Grissell Gold Medal this year. The construction is founded on Philibert Delorme's theories, which are exemplified in his "Nouvelles Inventions pour bien bâtir et à petits Frais" (16th century). This method of carpentry, which still goes in France by his name, consists of substituting for the ordinary system of framing and rafters curved ribs in two equal thicknesses, which are connected in section and tie, according to the form of curve, with a very ingenious form of mortise and wedge. The main ribs rise one-sixth of the span. Its curve is divided into five parts, the joints of which radiate to the centre of the segment. Mortises are cut about 4in. by 3in. to carry the joists, which should have a shoulder inward and a mortise in them outward, through which keys are driven to keep the whole together. The superstructure is as simple as possible. The effect of an entablature being got by the lintel as architrave, the frieze is really the space taken up by the roof truss which rests on the columns; above these are the projecting rafters. The roof is covered with semi-circular tiles of Spanish section. The whole is proposed to be constructed of English oak.

NEW INFIRMARY BUILDINGS FOR THE RICHMOND UNION.

THESE new buildings form part of a general scheme for the improvement of the accommodation at the workhouse. The new buildings are being erected on ground attached to the existing work-

house, which stands on land to the left of what is shown in our illustration. The architect is Mr. E. J. Partridge, F.S.I. Six separate buildings are now being erected by Messrs. S. N. Soole and Son—viz., female infirmary block, lying-in ward, nurses' home, male infirmary, lunatic wards, and ambulance house and mortuary. The five blocks intended for habitation have been arranged so that they each run longitudinally N.E. and S.W., and by this means the rays of the sun are enabled to shine during some part of the day on every side of each building. This, of course, is a very potent factor in obtaining cheerful and healthy apartments. The female and male infirmary blocks are connected on each floor by corridors, from which short branches connect the lying-in ward and nurses' home. By this arrangement the difficulty of superintendence is reduced to a minimum, access being as easily obtained between the upper floors as the ground floors. The female block comprises:—Ground, first, and second floors, each containing a large ward, which provides for 24 beds, a smaller ward containing three beds, a day-room and duty-room, besides larder, linen store, brush store, and the necessary sanitary accommodation. Access to the twenty-four-bed ward is obtained by folding doors from the landing at one end, and at the other it opens on to an external balcony. To provide a second means of exit in case of fire, there is an iron external staircase, and a balcony along the whole of one side of this large ward, and the placing of this balcony with a south-east aspect will increase the comfort of its use. The ward floor is of pitch-pine blocks, wax polished, and there are two independent stoves with descending flues. These stoves are intended to supplement hot-water radiators. The walls will be plastered, and the junction between the floor and wall will be formed with a slight hollow, so that no corners will be left. The duty-room is immediately adjoining the large ward, and has a small window for supervision purposes. This duty-room will be fitted with sink, dresser, and small range. Opening off the same landing is the three-bed ward before referred to, and this small ward may be used for separation purposes, distinct w.c. and lavatory accommodation being provided. The day-room is 20ft. in length, with a bay window at one end, and opens off the same landing. The larder and stores are arranged opposite the day-room, and adjoining these a passage leads to the sanitary annex on each floor. This annex, separated from the main building by a cross-ventilated lobby, contains a bathroom, a range of lavatory basins, two w.c.'s, and a slop-sink. It is intended to line the walls of the sanitary apartments with white tiling. The flooring, as also that of the sanitary annex and w.c.'s, will be of terrazzo. On each landing will be fixed a fire hydrant. Over the stores on the second floor is formed a small chamber, in which an aluminium fan will be placed to assist the ventilation of the whole building, and access will be obtained through this chamber by means of an iron stairway to the room over the large storage tank, to which admission can be gained for purposes of cleansing or otherwise, through galvanised iron gratings. The only accommodation provided below the ground level is a coal-cellar and a boiler-house (under the stores and a portion of the ground-floor landing). The lying-in ward is placed next in order to the female infirmary. The accommodation of this block comprises a lying-in ward for six beds, two labour-rooms, duty-room, larder, bath-room, and store. The ward and labour-rooms will follow the general description of the large wards in the female block. The ward has separate w.c.'s and slop-sink. In connection with the labour-room is fitted a slop sink, which may be approached from either room through a lobby. The duty-room is very similar to those in the female block, but there is no supervision window. The corridor from which these various apartments are approached will be paved with terrazzo, warmed by means of a radiator, and have also a fire hydrant fixed on the side wall. The dispensary is arranged in this block, but is approached by a separate entrance from the corridor. The nurses' home is placed between the lying-in ward and the male infirmary. This block consists of three floors, from each of which access is obtained by short branches to the main corridor. The general arrangement on each floor is a central passage or corridor, with the various rooms opening directly from it, and by placing the internal staircase at the end farthest from the corridor, the architect has met the necessity for a

secondary means of exit in case of fire, without having to provide a separate stairway for this purpose only. The ground floor contains nurses' dining and sitting rooms, with separate dining-room for the subordinate nurses or wardmaids, and a private sitting-room with bedroom attached reserved for the superintendent nurse. A kitchen is provided next the nurses' dining-room, with serving hatch thereto, and commodious larder attached. A linen-store and bootroom are also provided, and at the end of the block lavatory and w.c. The male infirmary, which is the next block, is placed at the other end of the main corridor, which runs in a direct line from the female infirmary. This building is very similar in general arrangement to the female infirmary before described. The fifth block is that provided for the reception of lunatics, and as by the orders of the Local Government Board such persons cannot be permanently retained in the workhouse, the accommodation required for these is not extensive. The building consists of a ground floor only, and comprises two separate two-bed wards, with attendant's room adjoining each, fitted with supervision window. There is also a padded room provided. The necessary warmth for the padded room is provided by a small independent stove in an adjoining apartment. The sixth building, a small detached erection in the corner of the site, contains the ambulance-house and mortuary. The whole of the buildings are to be erected in stock brickwork, with brick facings of red, relieved by lintols and strings of Portland stone, and the roofs will be covered with green slates. The time fixed for the completion of the buildings is September, 1902.

ROYAL ACADEMY EXHIBITION, 1901.

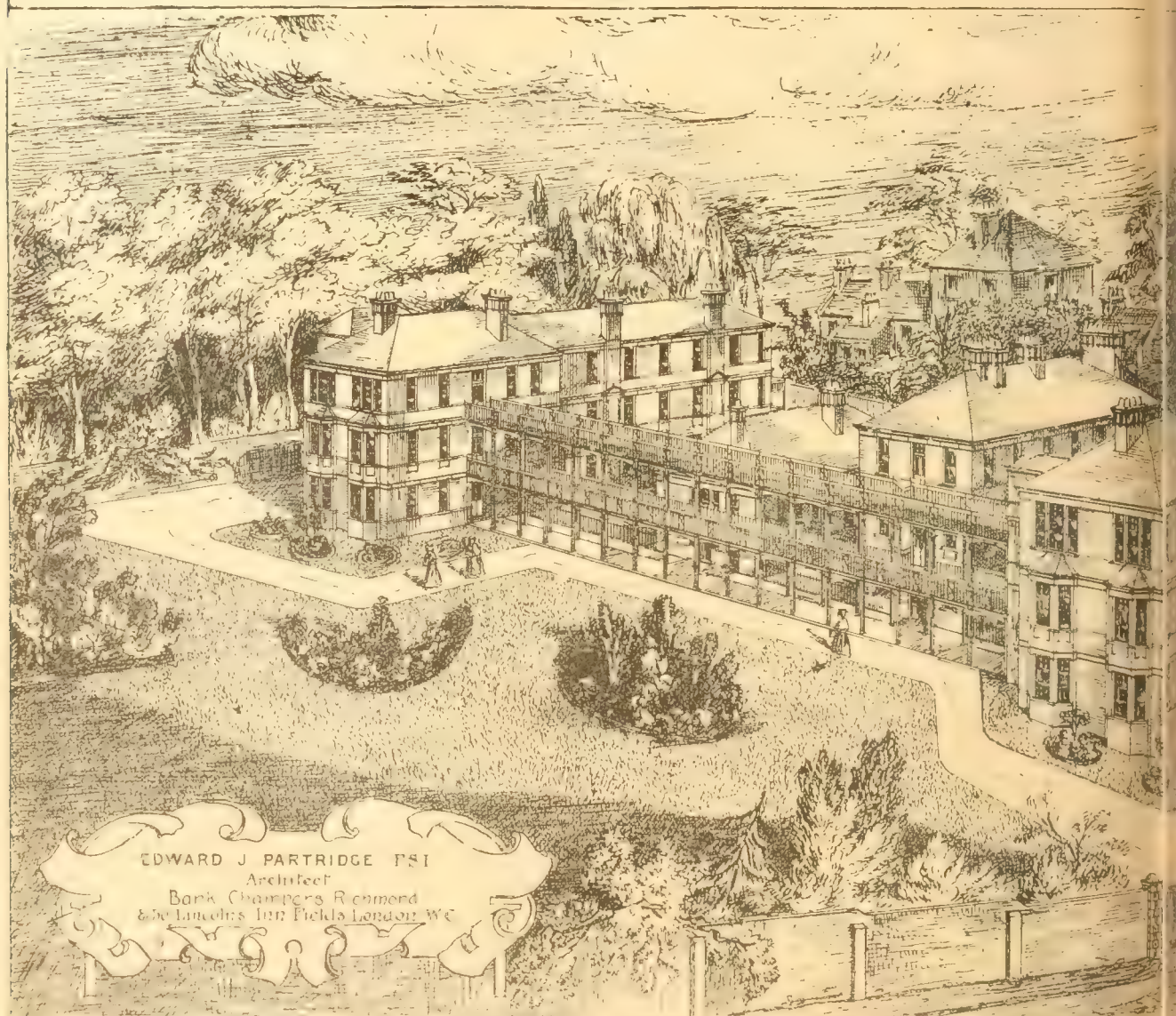
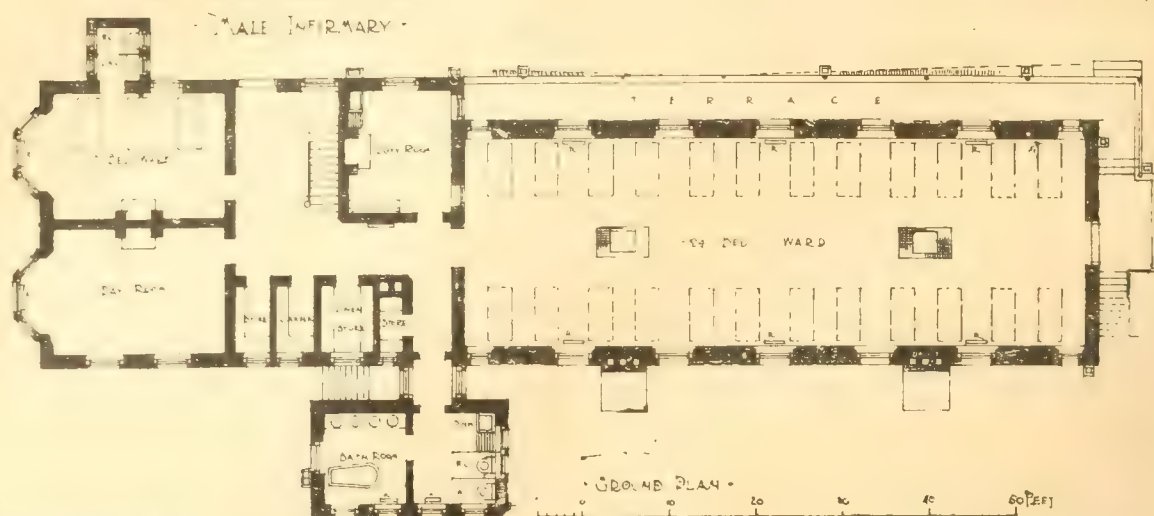
THE one day on which architectural drawings may be sent in this year is Friday, March 29, and these must be delivered by a personal agent to Burlington House, and no works in cases will be received. On Saturday, March 30, and on Monday, April 1, oil paintings are to be sent in; Tuesday, April 2, is reserved for Sculpture. The necessary forms and labels can be procured during the month of March only from the Academy on receipt of a stamped and directed envelope. Only gilt frames are admissible for architectural drawings.

We shall be glad if our readers who intend to submit works will send their drawings to us to be photographed before they are forwarded to the Exhibition, so that our reproductions of accepted works may be included in our series of Academy illustrations, which will be published after the galleries open, as in former years. We will receive and deliver works for our contributors; but the labels, &c., as above, must be sent complete with the framed drawings ready for despatch to the Exhibition.

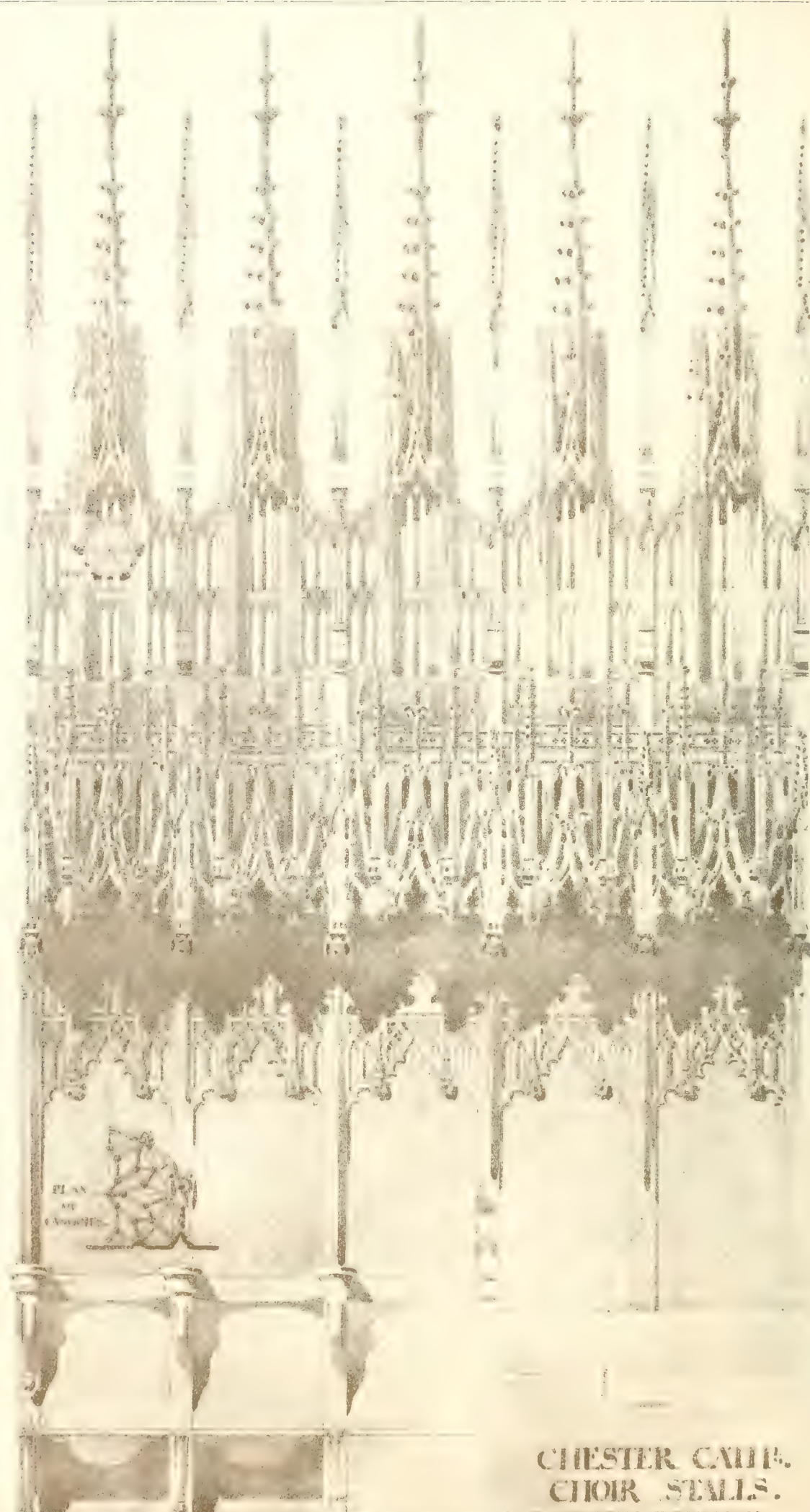
Mr. E. A. S. Fawcett, one of the Local Government Board inspectors, attended at the Urban Council Offices, Kingswood, on Friday, when an inquiry was held respecting the proposal of the urban district council to borrow £27,000 for the purpose of carrying out a sewerage scheme.

Mr. F. H. Tulloch, one of the inspectors of the Local Government Board, held an inquiry at the Council House, Bristol, last week, relative to the application made by the corporation to the Board for powers for the compulsory purchase of lands required for street improvement purposes. The properties referred to are situate in Fishponds-road, Hitchell-road, Weight-road, St. Leonard's-road, and Avondale-road, St. George; Stillhouse-lane, East-street, and Upper Parry Hill, Bedminster; Broadway-road, Bishopston; the Grove, Welsh Back; Bill-avenue, Smecca-street and Church-road, St. George, and property also required for making a new road from Queen-square to the Grove.

A special meeting of the visiting committee of the Lindsey, Holland, Grimsby, and Lincoln Asylum was held recently at Lincoln, for the purpose of adopting a report, to be forwarded to each of the contributing authorities, setting forth the cost of the proposed additions to the asylum. The cost of land was placed at £6,168 2s. 6d., cost of buildings and alterations £65,000, and architect's commission, fees of quantity surveyor, travelling expenses, &c., £4,450 8s. 6d.—a total of £75,618 11s. With the report were the minutes of the building and sanitary committee, in which the terms of employment of Mr. A. E. Gough as architect were recommended to be 5 per cent. upon the total cost of the works, and, in addition, out-of-pocket travelling expenses, and his fees as quantity surveyor 1½ per cent. on the cost.



NEW INFIRMARY
RICHMOND

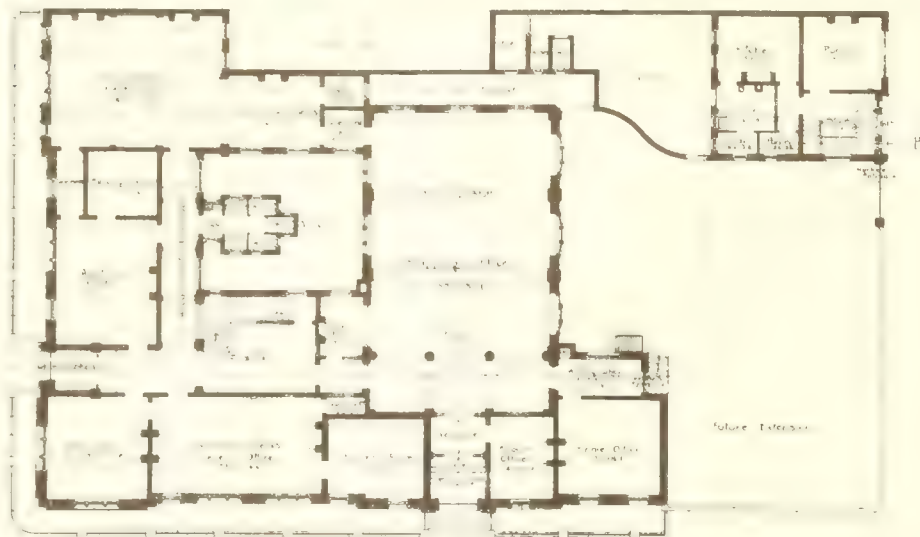


PLAN
OF
CHORISTERS

CHESTER CATH.
CHOIR STALLS.
SKETCH ELEVATION.

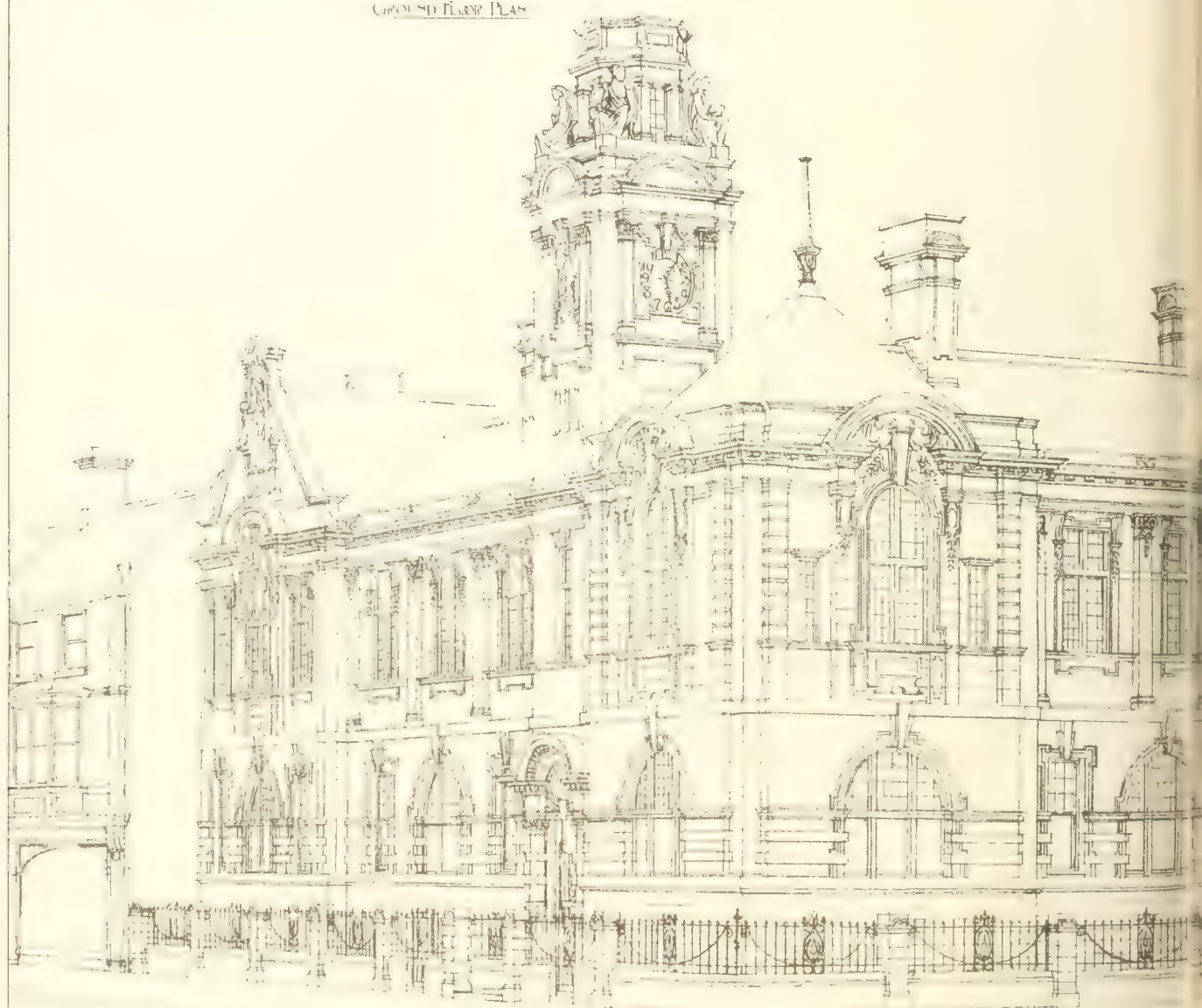
PHOTO TINT





GROUND FLOOR PLAN

NEW HALL

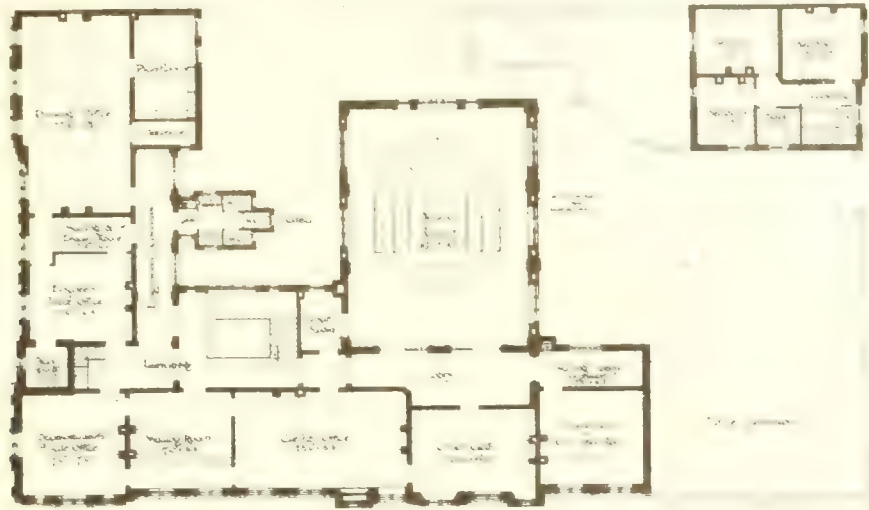


PERSPECTIVE VIEW

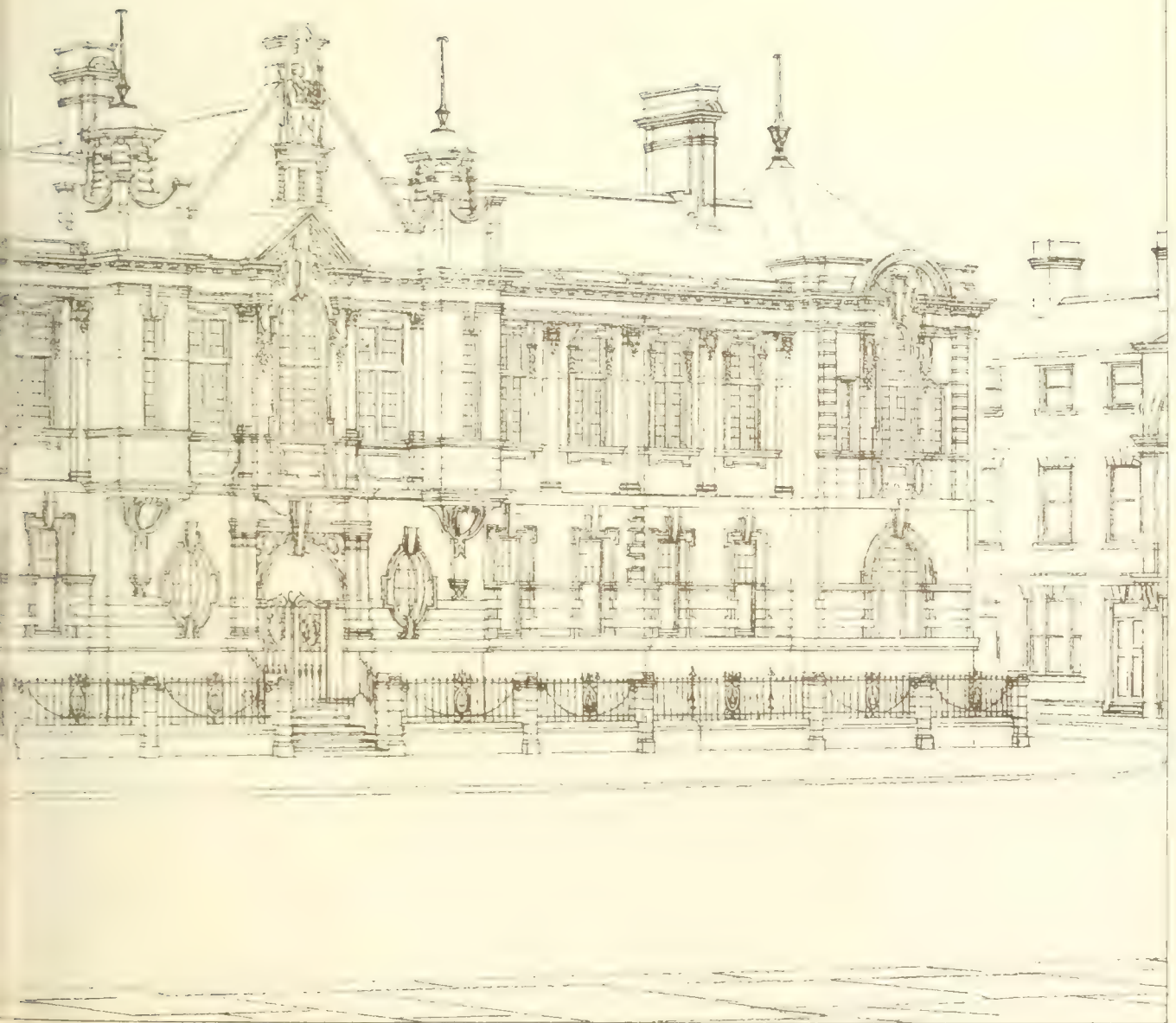
DESIGN

SWANSEA.

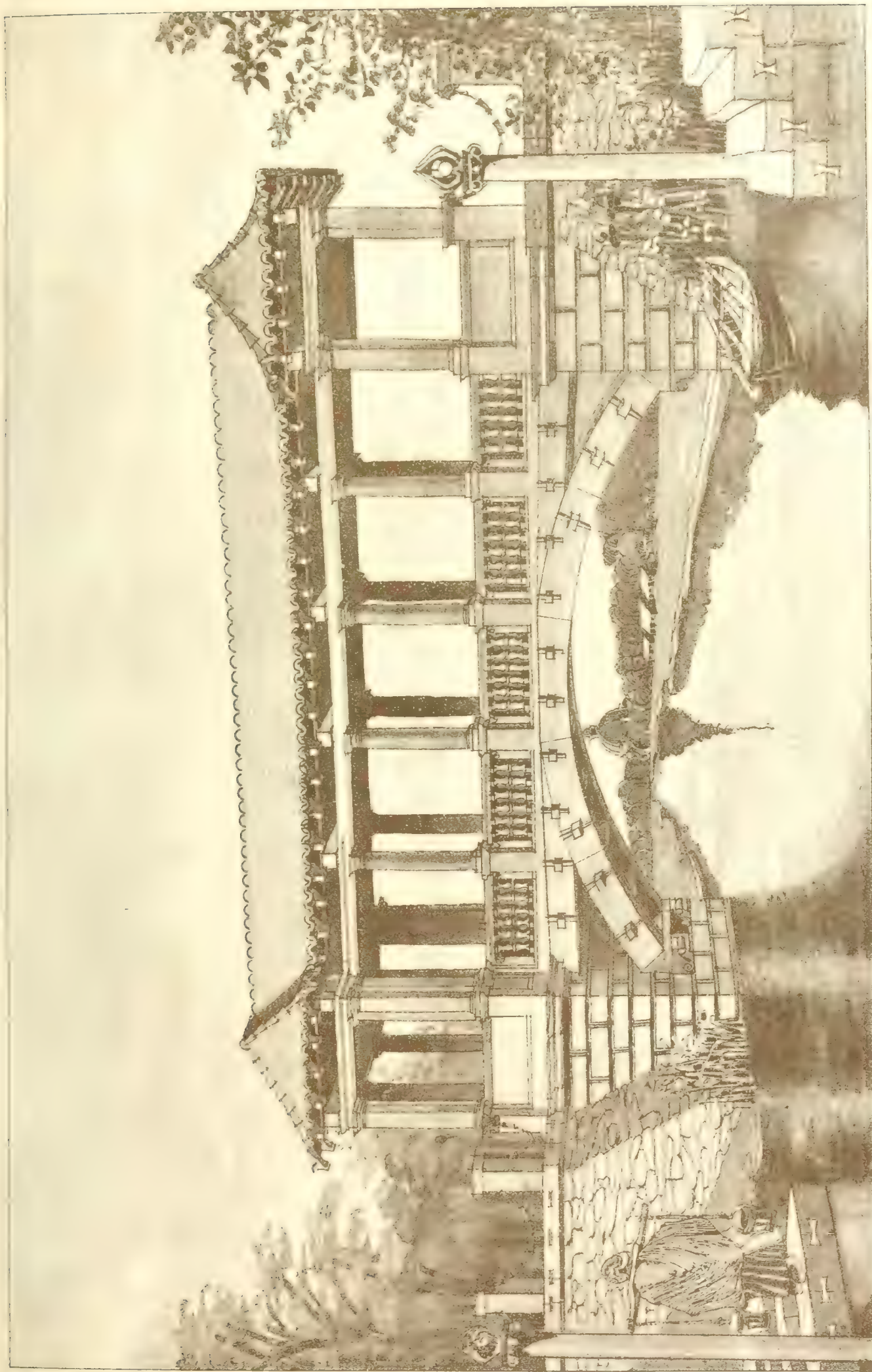
ARCHT.



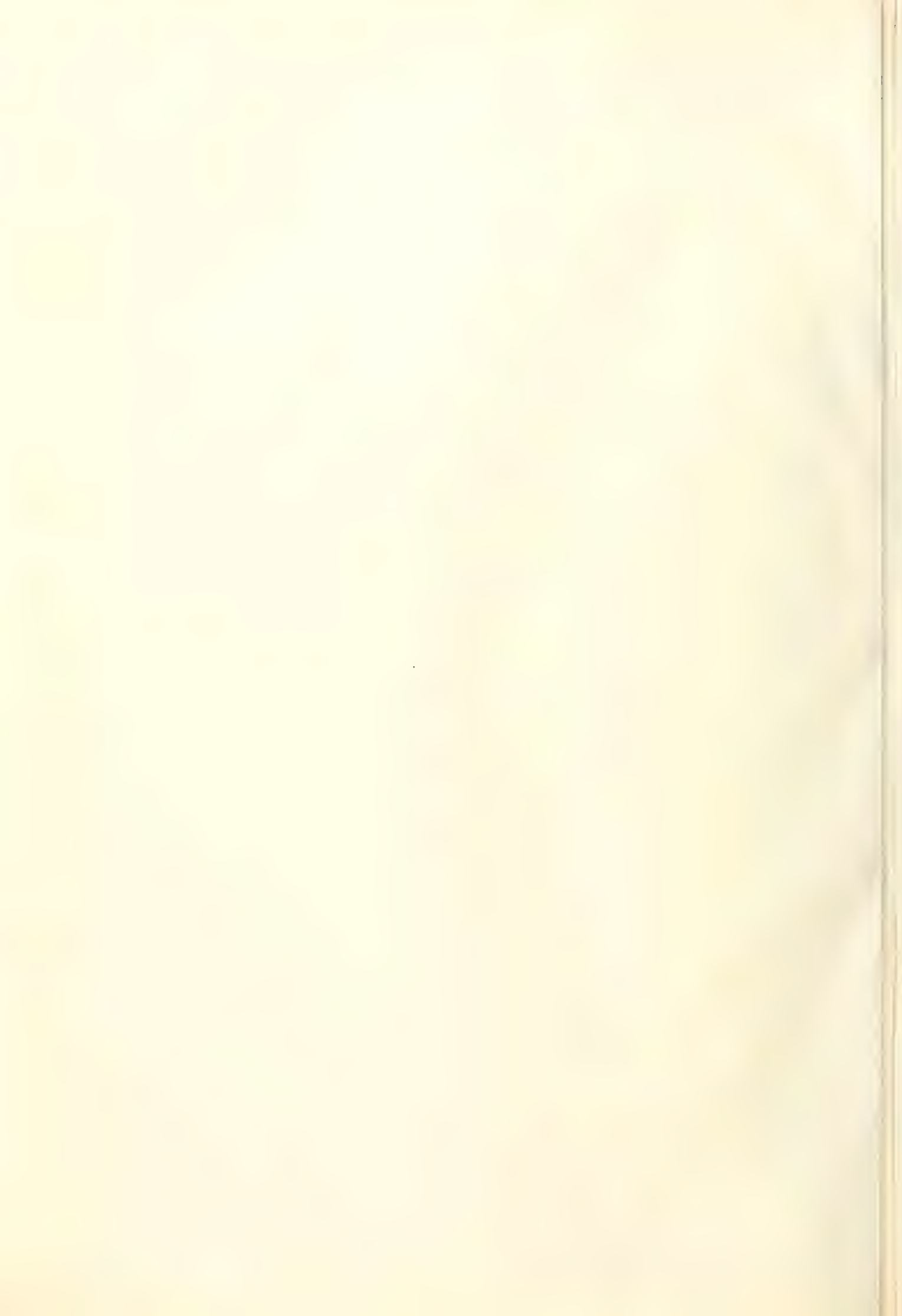
— FIRST FLOOR PLAN —

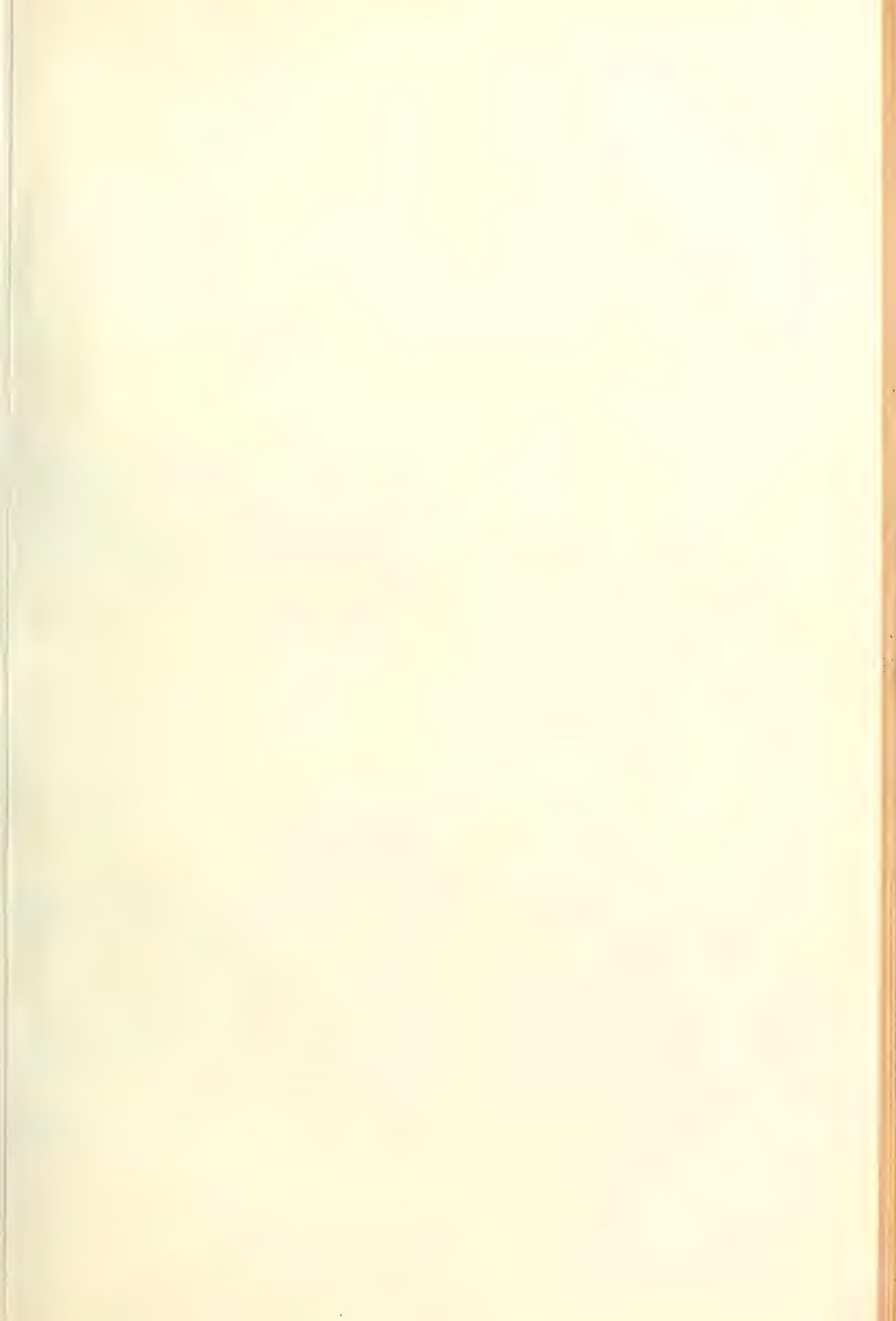


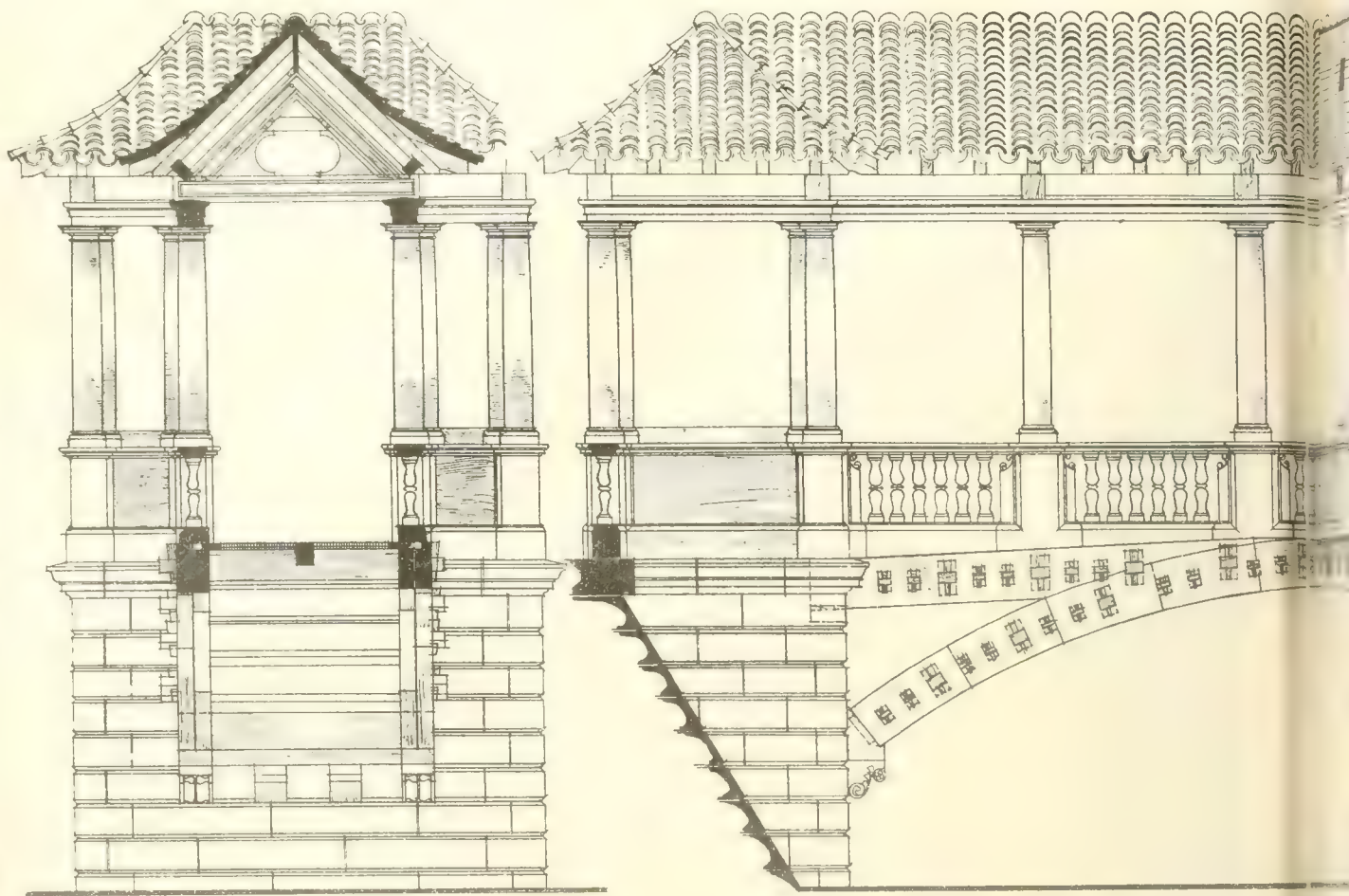




THE GRISSELL GOLD MEDAL DESIGN FOR A TIMBER BRIDGE BY JAMES F. GRISSELL.





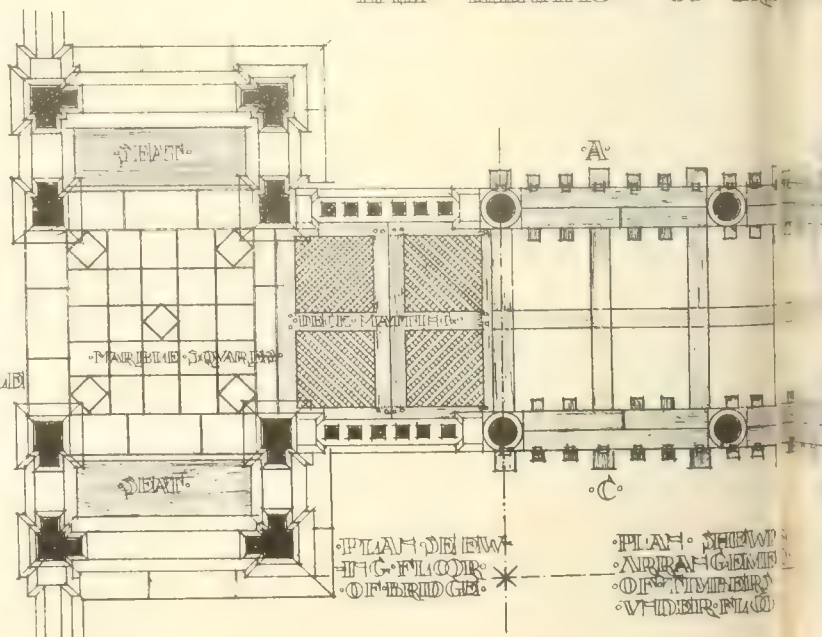


TRANSVERSE SECTION
THROUGH CENTRE OF BRIDGE

HALF ELEVATION OF BRIDGE

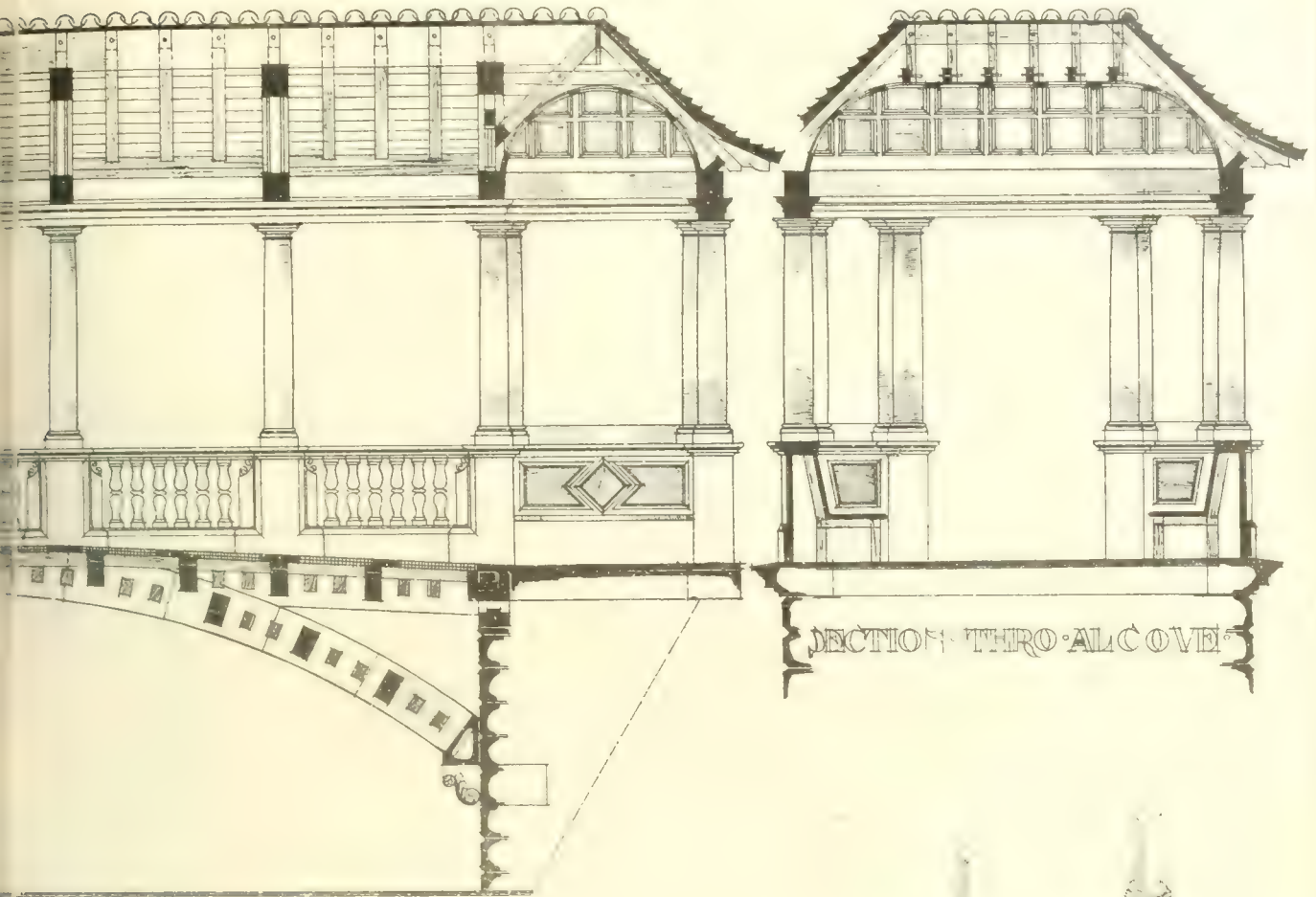
GRISSELL PRIZE
DESIGN FOR A
TIMBER FOOT
BRIDGE

ALL TIMBER TO BE BRITISH OAK.
ALL JOINTS NOTCHED AND PEGGED.
WEDGES USED WHEREEVER POSSIBLE.
TIMBER CYLINDRICAL AND TILERS
PEPPERHEAD AND GRAY IRON PIER.

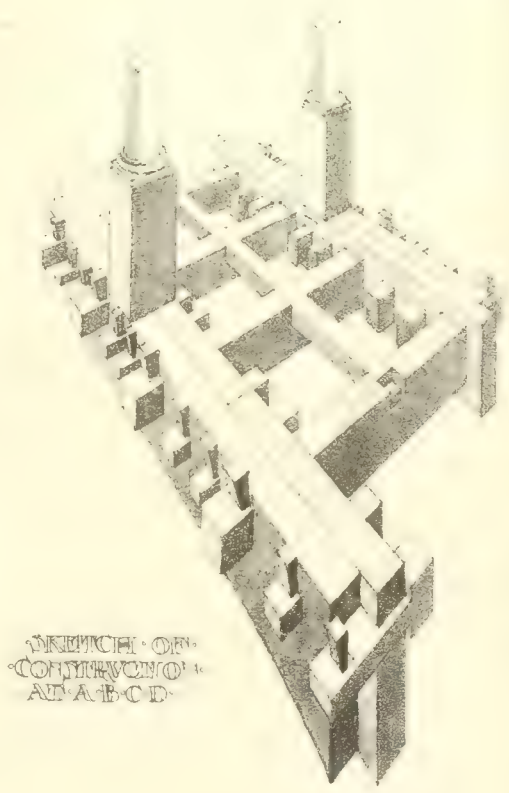
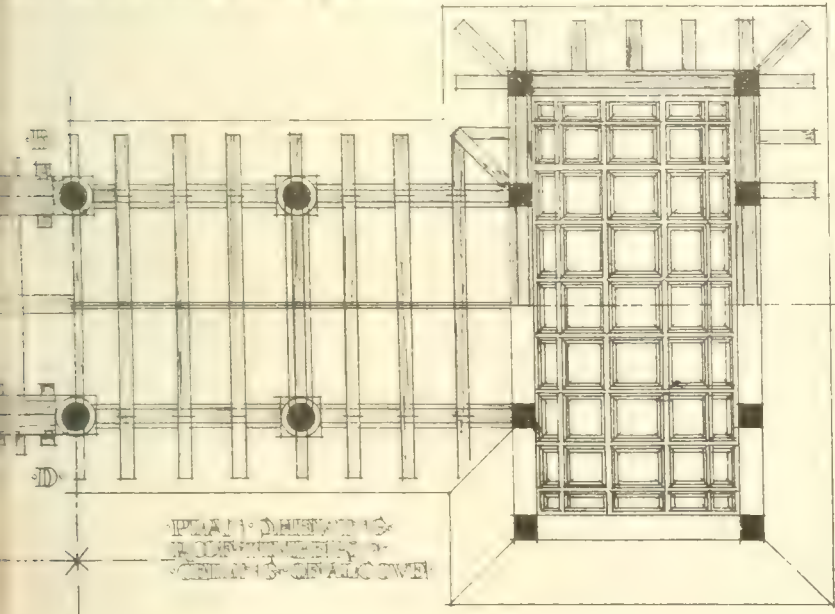


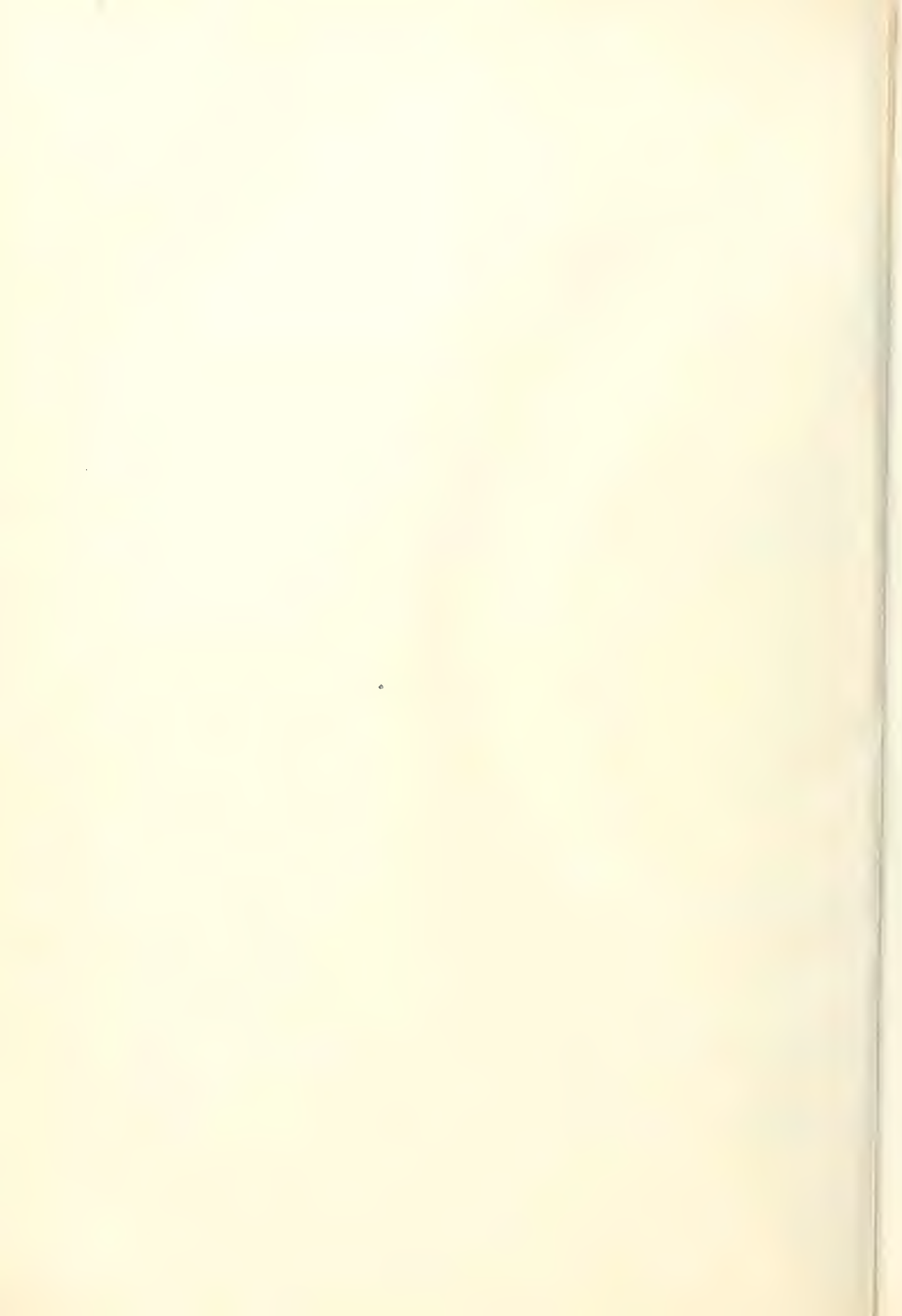
PLAN OF DECK
OF BRIDGE

PLAN SHOWING
ARRANGEMENT
OF TIMBER
AND IRON

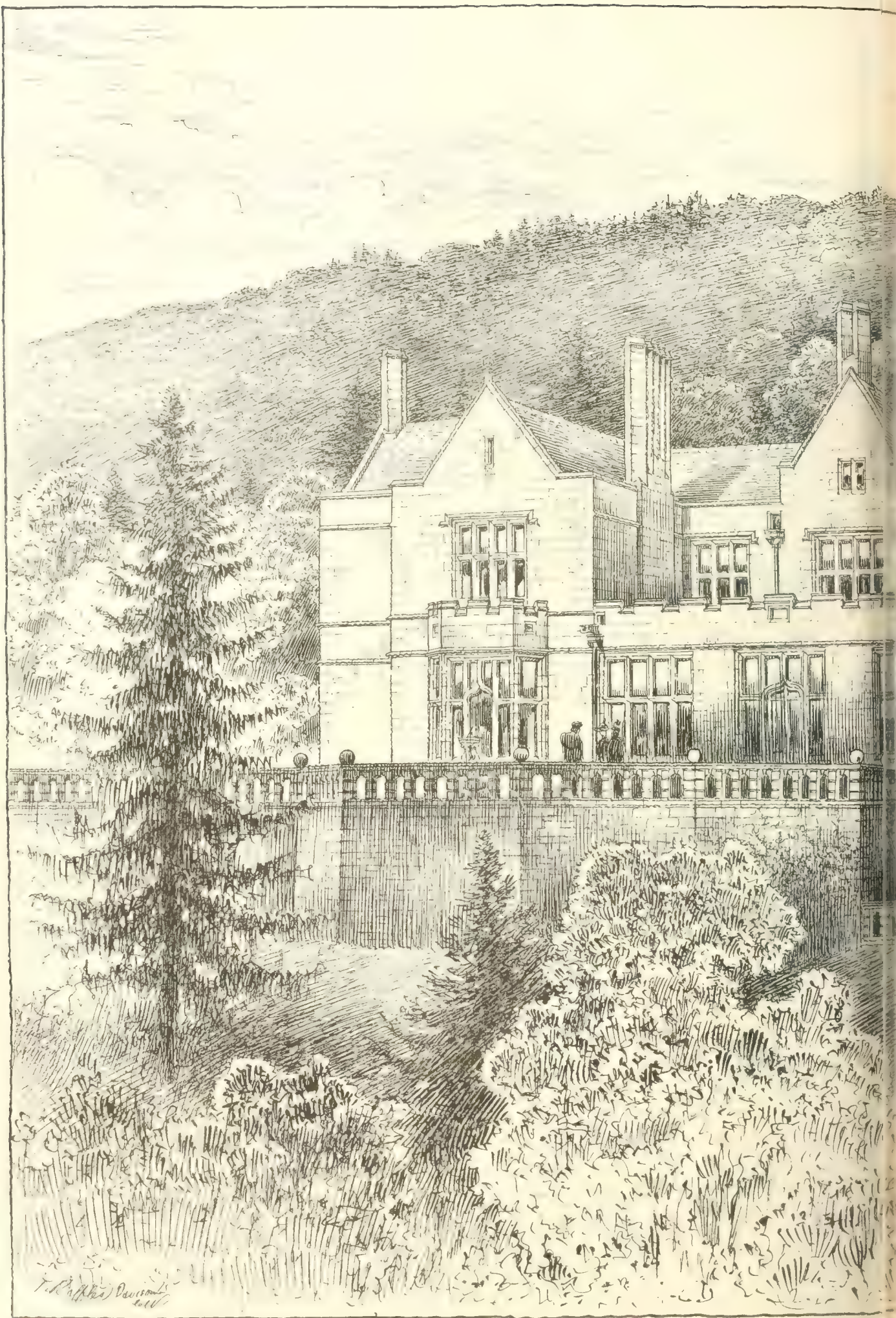


LONGITUDINAL SECTION



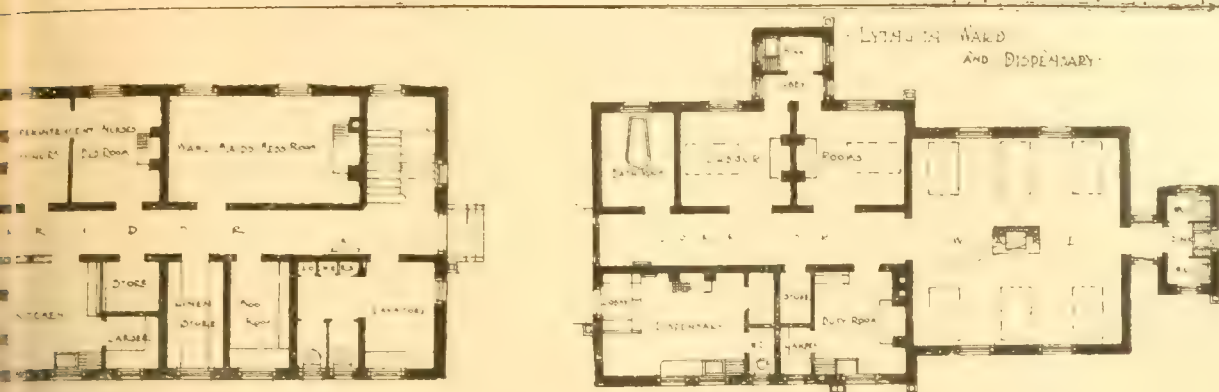






• KILDRUMMY - ABERDEENSHIRE





GROUND PLAN OF NURSES HOME

GROUND PLAN



BUILDINGS.
HOSPITAL.

Building Intelligence.

LICHFIELD CATHEDRAL.—The small but beautiful cathedral church of Lichfield was reopened on Saturday, after complete restoration, carried out at a cost of about £105,000, of which £25,000 had been expended since 1892. In that year the Dean and Chapter asked for £14,000 to complete all that was necessary to be done, but they have received no less than £24,000, of which nearly £9,000 was especially for sculpture and ornament. From 1856 to 1861 the cathedral was closed, and during that time, in addition to structural repairs, the whitewash was scraped from the walls, the bricks filling up the choir arches were removed, and the altar screen and high altar replaced on their original site at the end of the choir. The great feature of the second stage of the work, begun in 1877, was the restoration of the famous west front, with its statues of kings, saints, and bishops. The hundred statues were represented at that time by one row of kings in stucco, the rest of the front being covered with Roman cement and stucco. In 1884, the stucco had been removed from the whole of the west front, and nearly every niche had been filled, one of the statues being that of Queen Victoria. Two additions have just been made to this famous gallery—Dr. MacLagan, Archbishop of York, and Archbishop Theodore, who called St. Chad to the Mercian Church. The organ was another of the gifts of the second period. Externally the central tower and spire have been put into structural repair, the buttresses and two of the windows of the Lady-chapel have been restored, the south transept has been repaired, though the restoration of the buttresses has been postponed, while the north aisle has been secured only against further decay, the Dean and Chapter having decided to leave this part of the cathedral undisturbed. For the same reason they have left untouched the arcading on the west wall of the south transept. It was suggested that the roofs should be raised to their original pitch, and that the stone groining in the nave should be restored, but this, which would have cost £5,000, was not regarded as a pressing work. The Lady-chapel has been restored. The reopened windows—one in each flank of the apse—and an altar with a carved wood triptych from Oberammergau, having been provided, the chapel was reopened two or three years ago. A similar service has been done, at a cost of £1,200, borne by the Dean, for St. Chad's Chapel, a small square building on an upper floor, from the gallery on the south side of the choir. The Early English lancet lights, with their light detached columns, have been filled with stained glass, the groining has been restored, the floor has been laid with marble and mosaic, and an altar with an alabaster reredos, representing the Crucifixion, has been provided. The old Consistory Court, adjoining the choir, and the old treasury, with its aumbry, or vaulted cupboards, the muniment room adjoining the library over the chapter-house, and other parts of the cathedral which the havoc wrought in the Civil War had touched, have been repaired and beautified. In the Consistory Court a part of the wall of the second church, dating from 1050, is now to be seen; while in the same place the seats are remains of the stalls put into the choir by Bishop Hacket. To the present choir stalls canopies still remain to be supplied. Eighteen windows, four of them of considerable size, have been filled with stained glass, at a cost of about £4,400. Forty-seven statues, 22 of alabaster and 25 of stone, have been added. Altogether there are considerably over 200 statues, large and small, and no niche which was ever filled is now vacant. One gift is that of the large verd-antique marble table, with bronze and glass case, placed in the Lady-chapel by Mr. Yates Thompson, for the safe custody of the famous MS. of St. Chad's Gospels. All the repairs of the fabric both in wood and stone have been executed by Mr. R. Bridgeman, of Lichfield, under the direction of Mr. J. Oldrid Scott. The windows are chiefly by Mr. C. E. Kempe.

HORFIELD, BRISTOL.—The new Franciscan Church of St. Bonaventure, adjoining the Friary, Horfield, was opened yesterday (Thursday). The building has been erected at an expenditure of £4,000. The design is Early English in style, and consists of a nave, chancel, side chapels, aisles, baptistery, confessionals, a choir at the west end, and another choir for the friars over the chapel on the Gospel side, pierced with arched

openings into the chancel. The nave consists of five bays. The bays at the west end are flanked by the tower on the Apostle side, and by the baptistery on the Gospel side. The nave is divided from the aisles by an arcading 3 ft. in height, supporting the main principals of the roof, which has a span of 48 ft., and covers both nave and aisles. The west end of the nave is pierced with three lancet windows. The baptistery is apsidal in form, and is lighted by a lancet window in each bay. The tower, baptistery, and west end bay were not included in the contract for £3,800. The total length of the church is 90 ft., the width of the nave being 22 ft., the width across the church 48 ft., and the height from floor to roof 50 ft. The church is built of rubblestone with Bath stone dressings and facings of blue stone. It will accommodate about 350 persons. The whole was designed by Messrs. Pugin and Pugin, including the Friary, the contractors were Messrs. R. W. Wilkins and Sons, of Bristol, and Bro. Patrick acted as clerk of works.

PROFESSIONAL AND TRADE SOCIETIES.

ARCHITECTURAL ASSOCIATION OF IRELAND.—A meeting of this association was held on the 5th inst., in the Grosvenor Hotel, Westland-row, Dublin. Mr. F. Batchelor, F.R.I.B.A., president, occupied the chair. Mr. John Good (hon. sec. of the Master Builders' Association) delivered an address on "Some Aspects of the Labour Question as Applied to the Building Industry." The building industry in Dublin was, he remarked, a large one, comprising upwards of 7,000 hands. It was generally recruited from apprentices, indentured and unindentured, for improvers. The indentured apprentice system—a very ancient one—had been found to yield the best results, although capable of immense improvement. The conditions of apprenticeship varied considerably in the different trades. In the carpenters and joiners the apprentices were principally bound to the employers, and there was no limit as to numbers. However, the percentage of apprentices and improvers here was too small, being 22.8 per cent. instead of 33.33. In the second largest skilled branch of the building industry—the stone and the bricklayers—the apprentices must be the sons of a member of the trade; but under some circumstances the rule was relaxed on the payment of a £30 fee. One would scarcely have thought that this hereditary or "caste" system could exist in these enlightened days. There were only 3.2 per cent. of apprentices in this trade, and 1 per cent. of improvers—less than one apprentice and improver to every 24 men, instead of one to three or 33.33 per cent.—the necessary number to keep the trade in a healthy and efficient state. In the plastering trade, where the "caste" system in regard to apprentices also prevailed, and no improvers were allowed, there were 25 per cent. of apprentices, or 8.33 per cent. below the necessary number. In the stonecutting trade, in which the "caste" system also prevailed, the percentage of apprentices was 19. In other words, in the entire trade there were 17.75 on an average of apprentices, as against the necessary 33.33 per cent. Thus sufficient men were not being trained to fill the gaps in the ranks, tradesmen were coming from other places to fill the positions, and thousands of able, but unskilled, hands were forced to seek a living elsewhere. The speaker trusted the present system would soon be amended through the exertions of the new Department of Technical Instruction. A discussion followed, in which Mr. Beckett, Mr. Clarke, T.C., and others took part, and Mr. Good replied.

FORMATION OF A DEVON VALUERS' ASSOCIATION.—A general meeting of valuers was held at the Half-Moon Hotel, Exeter, on Friday, to receive a report from a committee relative to the Agricultural Holdings Act. The report also recommended the formation of a Devon Valuers' Association. Mr. J. M. Pratt presided, and there were present Messrs. Hellier, Osmond, J. G. Drew, Drew, Hussey, Birmingham, Jutson, A. E. Ellis, Rendell, Sanders, R. May, Barrington, Applin, King, Chaplin, Passmore, Ayre, G. W. Boswell, Loveys, Perrett, Winsley, Knowlman, Sawdye, and Powlesland. The report of the joint committee formed from the Devon valuers, and from members of the Devon and Cornwall branch of the Surveyors' Institute, was received and adopted. The question of compensation to be allowed for manures used on land not having

been settled by the committee, the meeting, after a long discussion, came to a decision on that matter. It was decided that the committee's report should be printed, and circulated amongst all valuers in the county. It was agreed that the joint committee should draw up a scheme for the formation of a Valuers' Association.

GLASGOW ARCHITECTURAL CRAFTSMEN'S SOCIETY.—The usual meeting of the society was held on Friday, the 8th inst., Mr. Isaac Low, jun. presiding, when papers by Mr. Jas. McKissack and Mr. Jas. Lochhead, A.R.I.B.A., were read on the subject of "Planning of Tenements for the Labouring Classes." Mr. McKissack confined his remarks to tenements constructed on the "common close" system, with reference to the arrangement of two-roomed and single-apartment houses on the most sanitary and economic principles. The lecturer advocated the desirability of providing a separate w.c. to each house, and showed suggested plans of such arrangements. Mr. Lochhead's paper dealt with that type of dwelling to which entrance is gained from a balcony at each flat, with common stair placed either outside or within. In planning of the "balcony" system, the following points were to be considered:—The staircase should be placed outside preferably, and no bedrooms should overlook the balcony, the scullery or w.c. being placed adjacent to this. The site would require to be fairly level, in order that the level balcony might serve a sufficient stretch of building.

THE SURVEYORS' AND AUCTIONEERS' CLERKS' PROVIDENT ASSOCIATION.—At the Auction Mart Tokenhouse-yard, on Wednesday week, the seventeenth annual meeting of the Surveyors and Auctioneers' Clerks' Provident Association was held, Mr. Daniel Watney in the chair. The report showed that the number of members on December 31 was 153. The financial position was highly satisfactory. The income for the year was £542, against £514 for the preceding 12 months. The expenditure was £206, leaving a net balance of £335. Added to the amount brought forward on December 31, 1899, a grand total of £5,150 was shown. The chairman, in moving the adoption of the report, said that the membership showed a net gain of 16 on the year. On account of sick allowance £83 had been paid. They had now £4,800 invested in Government securities, and that was very satisfactory considering that the association had only been founded for 17 years. No claim had yet been made on the life assurance fund, but they had all heard the sad news of the death of a member recently and probably a claim would be made shortly. The committee, after mature consideration, and by the advice of the actuary, decided to recommend the reduction of the amount for which a member could insure his life from a maximum of £100 to one of £20. At the inception of the association the limit was £20, and the committee judge it prudent to revert to that figure. The proposed alteration only applied to the future. Mr. W. Cudlipp (hon. secretary) said they were thoroughly solvent, and had plenty of money. Nevertheless, they thought it would be a wise step to take the actuary's advice. The adoption of the report was seconded by Mr. H. W. Bilby and agreed to. It was decided, on the motion of Mr. A. D. Sturley to reduce the life assurance maximum as recommended by the committee. Mr. J. Payne was elected the hon. secretary in the place of Mr. W. Cudlipp, who resigns because of inability to attend the meetings.

The council of the Royal Institute of British Architects having again brought before the Local Government Board the question of the Administration of Building By-laws in non-Metropolitan districts, the Parliamentary secretary of the Local Government Board, Mr. Grant Lawson, received a deputation from the Institution on Tuesday last. The deputation urged the views laid before Mr. T. W. Russell when they were received by him in October, 1899.

The rural district council of Hexham have adopted plans by Mr. Routhwaite, of Newcastle, for a joint fever hospital, estimated to cost £3,700 without site.

Messrs. Wm. Potts and Sons, clock manufacturers, Guildford-street, Leeds, have just completed a new hour-striking clock showing the time upon one large external dial, which is painted and gilt with gravity escapement and compensation pendulum and all the latest improvements inserted, at the pretty little rural parish church of Dugley, Northamptonshire, for the Right Hon. Viscount Downe Dugley Park.

Intercommunication.

QUESTIONS.

[11696].—Testing Portland Cement.—Many descriptions and rules are given for testing Portland cement, but they vary. Are there any instructions of a simple kind that may be followed? The following questions I should like answered:—How should an average sample be selected, and from how many sacks? In the gauging, how much water should be used for the sample? Should the paste be rammed into the moulds? How long should the fragments remain in the moulds, and should they be placed in water till testing? What number should constitute the average for tensile strength? What should be the average tensile strain at three and seven days? Should the strain be applied slowly? An answer to any or each of these questions will oblige. A. P. M. MAN.

REPLIES.

[11677].—Stone for Window-Sills.—What I have said I adhere to, and to prove the accuracy of my information, I will quote from the writings of Mr. George P. Merrill, which are circulated broadcast over the States, and which have not yet been controverted. Mr. Merrill is Curator of Building Stones in the National Museum, and admittedly the best authority on building and ornamental stones in the United States. He says: "The chief defect in nearly all American marbles is that they are too coarsely crystalline. It is this fact, and this alone, that renders American marbles now in the market inferior to such as are imported from Belgium, the French Pyrenees, Italy, or North Africa." So much for American marble. Now I assert that the so-called onyx used for decorative purposes here and abroad, and which is imported from Mexico, California, and Algiers, is not onyx, but onyx-like marble, or onyx-marble. Onyx is a cryptocrystalline variety of quartz, like chalcedony, whilst onyx-marble is carbonate of lime and nothing more, the two substances having totally different chemical and physical properties. The name onyx is therefore in this connection misapplied, misleading, and incorrect. I quite understand that a Saturday half-holiday spent in that monument of hoary antiquity, the British Museum, would satisfy any reasonable man that terracotta "will last for ever"; but I am not a reasonable man, and must therefore remain unsatisfied, even after the assurance of such an eminent authority as Mr. H. H. Heme. I am not sufficiently interested in sham medieval gimeracks to waste time in viewing that "beautiful font" in Sloane-street. I leave the cult of such modern antiquities to those who make money out of the manufacture of them. Mr. Heme says: "What our excellent all-round correspondent 'W. E. M.' writes rather makes one long for more." I thank him for the compliment, and am sorry I cannot reciprocate it. Mr. Heme is sometimes unconsciously a humourist—for instance, where he says that anonymous statements are only of value when names and places are couchasséd:—"W. E. M."

[11677].—Stone for Window-Sills.—I am much amused at the discussion between Mr. Harry Heme and "W. E. M." Mr. Heme has evidently got out of his depth. Onyx is silicon di-oxide, SiO₂ (oxygen 53.3, silicon 46.7, 100). Onyx-marble erroneously called onyx by Mr. Heme is calcium carbonate, CaCO₃ (carbon 12, oxide 44, lime 56, 100). Travertine is likewise calcium carbonate, CaCO₃. From the above you will observe that Mr. Heme does not know the difference between the two substances, while "W. E. M." is apparently well versed in the subject.—CHEMIST.

[11687].—Hornbeam.—Carpinus: C. Betulus, the Hornbeam, and C. Americanus are well known for their timber, which is principally employed for making agricultural implements, and for the cogs of mill-wheels.—(Bentley's "Botany.") T. Laslett, in "Timber and Timber Trees," Admiralty timber inspector (1875, Macmillan and Co.), gives thus on C. B.: "Is an indigenous British tree, which thrives well even upon a poor soil, and attains the height of 40ft. or 50ft., with a circumference of from 30in. to 45in. The wood is white in colour, close to the grain, hard, tough, strong, and of moderate weight; its pores are minute, the medullary rays are plainly marked, and there is no sap or albumen. It may, therefore, be worked up to great advantage. Hence we find it employed for a variety of purposes. It is useful in husbandry, and agricultural implements made of the sound and healthy wood wear well, as it stands exposure without being much affected by it. Also used by engineers for cogging machinery. If pollarded becomes blackish in colour at centre, owing to the admission of moisture, rendering it unfit for many purposes where clean, bright surfaces are required. It is also liable to be detrimental to purity and detrimental. When subjected to vertical pressure, cannot be compressed without its fibres, instead of breaking, it merely bends up like the reed, showing its flexibility and fitness for service in machinery. He could not get suitable specimens of standard dimensions to test transverse strength." This latter paragraph is the source of information. I am not a letter, if there now, is an experienced man, and I cannot go outside of him. See his works in public libraries.—REGENT'S PARK.

[11692].—Tombstone.—Limestone from Brackley East quarry, Leicestershire, is a compact, highly-crystalline weather stone (see Quarry List, No. 269). It is, like Hopton Wood stone, a carboniferous limestone. The carriage of Brackley stone to Wilts would be considerable, as the quarry is one mile and a half from the station, and this latter is 80 miles west of Dublin, the nearest port for transit to Bristol. There are other quarries in the Irish Carboniferous Limestone nearer Dublin which yield a good building stone. If the white marble used in Philadelphia and other American cities is a good enough weather-stone for window-sills, why not try it for recumbent monuments? The Irish limestone is a dark bluish grey, a most unconventional colour for a tombstone.—W. E. M.

[11692].—Carstone.—You may be thinking of stone called Wild Carr, mentioned in Young's (Spon's) Price Book. On truck at Pateley Bridge, near Leeds, same prices as Scotch Ash stone, which is priced at from 1s. 3d. to 4s. 6d. per yard super. for flags, from 1 1/2 in. to

4in. thick; for self-faced rough-boasted, toolled and rubbed for toolled landings per foot super., 7d. to 1s. 1d. from 2 1/2 in. to 7in. See Cemetery headstones or landings 2s. 6d. per foot cube. Do not notice it in Laxton under Mason. H. speaks of New Park spring stone put on at Pateley Bridge, a light colour, even grained sandstone, price at quarry 1s. 4d. to 1s. 8d. cube; London terminals, 2s. 6d. to 3s. 6d., to beat Tidesley, Shepherd, and Masson, Paddington. Laxton quotes Scotch Ash 1s. 6d. foot cube (at quarry, I expect). Railway rate to London 10s. 10d. per ton of average 14cft. Scotch Ash Co., Ltd. Longman's Notes (Part 3) on Materials speaks of Scotch Ash as sandstone, white, light green, and ragstone, suitable for heavy engine bases, foundations, &c. This stone appears to be in or about Millstone or Coal Measures in Yorkshire. No particulars as to working that I note.—REGENT'S PARK.

[11692].—Carstone.—This is a ferruginous sandstone of indefinite composition, which occurs irregularly in certain divisions of the Lower Greensand of Norfolk, Kent, Surrey, Sussex, and Hants. The older writers on geology applied the names "iron sand" and "carstone" to the entire Lower Greensand formation. See BUILDING News Quarry List, No. 212, for particulars of the carstone quarried at Snettisham, Norfolk, and the article on Norfolk in the series now being published in the BUILDING News on "British and Irish Building Stones."—W. E. M.

CHIPS.

The city council of Durham have accepted the gift from Lord Herschell of a portrait of his father, the first Baron, by Prof. H. von Herkomer, R.A., to be hung in the town-hall.

In the Arches Court, on Monday, the Dean of Arches (Sir Arthur Charles) delivered judgment in the appeal of the vicar and churchwardens of St. Anselm's, Pinner, against a refusal of Dr. Tristram, Chancellor of the Diocese of London, to grant a faculty for the erection in the church of a screen with figures, on the ground that it was illegal, as tending to the encouragement of superstitious reverence. His Lordship now allowed the appeal. He could not regard the proposed erection, either from its character or intended position, as in itself unlawful; and no evidence had been given to lead him to suppose that it was likely to be treated otherwise than simply as an architectural decoration. The faculty would be granted.

The new infectious diseases hospital, East Boldon, is being warmed and ventilated by means of Shorland's double-fronted patent Manchester stoves, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

At Chester Consistory-court, on Friday, Canon Cooper Scott and the wardens of St. John's Church, Chester, applied for a faculty to place a stained-glass window in the church as a memorial to the late T. M. Lockwood, architect to the church, who was for many years a parishioner. The cost, about £150, will be defrayed by the master builders of Chester and others. The incumbent and the wardens of Holy Trinity Church, Gee Cross, applied for a faculty to take down the present wooden turret at the western end of the church, and to erect in lieu thereof a tower; to place a clock and peal of bells therein; also to erect a lychnae at the principal entrance in Higham-lane. The expense, about £600, will be borne by voluntary contributions. The faculties were decreed.

Mr. Walter Ives, of Sydney, has been elected, for the third time in succession, as president of the Master Builders' Association of New South Wales.

At the last sitting of Glasgow Dean of Guild Court, Lord Dean of Guild Gourlay presiding, linings for new buildings to the value of £23,000 were granted.

An extensive group of buildings is about to be erected at the corner of Wells-street, with a frontage in Neate-street, S.E., by the corporation of Camberwell, to provide public baths and wash-houses for the northern district of the borough, and including a new public library. Towards the cost of the scheme Mr. J. Passmore Edwards has undertaken the expense of the public library, thus adding to his many previous and notable gifts of public buildings to this vast South London parish. The buildings will be carried out from the designs of Messrs. Maurice B. Adams, F.R.I.B.A., and William Octoby, A.M.I.C.E., the borough engineer, as joint architects.

The Board of Trade have recently confirmed the following Light Railway Orders:—(1) West Hartlepool Light Railways (Deviations, &c.) Order, 1901, authorising the deviation of a light railway authorised by the West Hartlepool Light Railways Order, 1897. (2) Ormskirk and Southport Light Railways Order, 1901, authorising the construction of light railways in the county of Lancaster from Ormskirk to Southport; (3) Kelvedon, Tiptree, and Tolleshbury Light Railway Order, 1901, authorising the construction of a light railway, in the county of Essex, between Kelvedon and River Blackwater; (4) Morley and District Light Railways Order, 1901, authorising the construction of light railways in the borough of Morley and the urban districts of Drighlington, Gildersome, and East and West Ardsley, in the West Riding.

Our Office Table.

The latest acquisition of the National Trust for Places of Historic Interest or Natural Beauty is the old court-house at Long Crendon, a picturesque village on the low ridge which forms the western boundary of the Vale of Aylesbury. It is proposed to repair this remarkable building, which was threatened with destruction by weather; but there is to be no attempt at "restoration." The building, which is locally known as Staple Hall, is peculiarly interesting as forming a link between the feudal life of the Plantagenet period and of the present day. It is an ancient half-timbered house, dating probably from the 14th century, and seems to have been erected as a storehouse for wool belonging to the Dormers of Thorne and Crendon.

PROFESSOR G. C. MERTON discusses in a German contemporary the relative advantages of pin-connected over riveted bridges. When the great influence of secondary strains on the degree of safety of a bridge was recognised, it was at first believed that pin-connected structures would be less effected by them than riveted ones. Gerber, consequently, introduced his characteristic pin-bridge type, patented in 1866. Manderla pointed out, however, that his observations indicated the occurrence of a rotary movement of the pin only in the rare cases when its friction is overcome by very strong shocks. It is only in short spans that impact ever produces a turning motion on the pins. In such cases, the excessive flexibility of the construction invariably proved troublesome, and the majority of American engineers have been led to make bridges of short span up to 180ft., with riveted connections. In large spans, the heavy tight-fitted pins form as rigid a connection as a riveted one. One great advantage of pin-bridges over those with riveted joints is their easy, rapid erection, even in the absence of skilled workmen. For this reason pin-bridges have been growing in importance in German bridge shops which are building up an export business. Some of these have been so perfected that not a single rivet need be inserted during their erection.

The continued progress of the Prudential Assurance Company is simply marvellous. For more than fifty years we have read its annual reports, and whoever, in another fifty, has to comment on them for this journal will almost certainly have to deal with totals in billions of pounds sterling. The company's total assets to-day are close on forty millions sterling! Its premium income last year was more than eight and three-quarter millions, and the total number of policies in force was 13,891,667. Its Staff Provident Fund alone reaches £86,742. Many a company would be glad to boast such a total income! It is our firm conviction that the Prudential Company will, one of these days, pay off the National Debt, as a free gift to the nation!

At a meeting of the Kirkintilloch Town Council, on Monday, it was reported that the offer of a free site for the proposed town-hall had been made by Mr. William Muirhead, Townhead. The site had a frontage to the canal in Loggiebank-road. Estimates were opened for the construction of a new reservoir at a cost of nearly £20,000.

The Glasgow District Lunacy Board have adopted a proposal to extend the accommodation of Woodilee and Gartloch Asylums, which will entail an expenditure of about £200,000.

At a meeting of the Kintyre District Committee of the Argyll County Council in Campbeltown on Monday, Mr. William Robertson Morton, C.E., surveyor, Newmilns, was appointed road surveyor for the Kintyre district in room of Mr. James Mollison, resigned, at a salary of £150.

An improvement was shown in the character of the property, and a slight increase in the supply, so that business at the Mart was conducted with satisfactory results last week. Ground-rents of upwards of £800 in amount, with remote reversion, were almost entirely disposed of at 26 1/2 years' purchase. On the other hand, an important property, comprising freehold and leasehold premises, close to Smithfield Market, failed to reach the reserve.

The Earl of Northbrook, Lord Lieutenant of Hampshire on Saturday afternoon opened a new drill-hall at Portsmouth, which has been built at the cost of the Admiralty, who have acquired, for the purposes of the Naval barracks, the building previously occupied by the 3rd Volunteer Battalion Hampshire Regiment.

MEETINGS FOR THE ENSUING WEEK.

Monday.—Royal Institution of British Architects. "The Arts of Pictorial Mosaic," by C. Harrison Townsend, F.R.I.B.A. 8 p.m.
Society of Arts. "Electric Railways," Cantor lecture No. 2, by Major P. Cardew, 8 p.m.
Leeds and Yorkshire Architectural Association. "French and English Abbeys," by Francis Bond. 6.30 p.m.
Liverpool Architectural Society. "The Restoration of Ordsall Hall," by Neville Hampson.

Tuesday.—Institution of Civil Engineers. Discussion on "The Aesthetic Treatment of Bridge Structures." 8 p.m.
Architectural Association of Ireland. "Architectural Amenities," by R. C. Orpen. 7.45 p.m.

Wednesday.—Society of Arts. "Evolution of Form in English Silver Plate," by Percy T. Macquoid. 8 p.m.
St. Paul's Ecclesiological Society. "Notes on the Brasses of Kent, Part II., Ladies and Civilians," by Mr. Mill Stephenson, F.S.A. 7.30 p.m.

Thursday.—Society of Architects. "Dilapidations," by W. J. Jennings, of Canterbury, Member of Council. St. James's Hall, Piccadilly. 8 p.m.
Carpenters' Hall Free Lectures. "Westminster Abbey," by Prof. T. Roger Smith, F.R.I.B.A. 8 p.m.

Friday.—Glasgow Architectural Craftsmen's Society. "Temporary Carpenter's Work," by R. Stuart, R. Wilson, and W. H. Baxter. 8 p.m.
Birmingham Architectural Association. "The B.A.A. Excursion to Stamford," by C. E. Bateman, F.R.I.B.A. 6.45 p.m.

The Stockton-on-Tees Corporation have accepted the offer of £5,000 made by Mr. Frank Brown, J.P., a local resident, for the provision of a school for the higher education of girls.

The foundation-stone of a new Baptist chapel and school, in course of erection in Walton-lane, opposite Stanley Park, Liverpool, was laid on Wednesday week. The school is to seat 400 and the chapel 700, and the total cost is estimated at £6,000.

A new volunteer drill-hall will be opened at Blaydon-on-Tyne on Wednesday next. It is built of local stone, and contains an assembly-hall 90ft. by 40ft. The frontage is occupied by a block of offices, which comprise on the ground floor the orderly room, armoury, and sergeants' mess. On the first floor are the officers' mess and the store-room for clothing, &c. The building, which had been erected by Mrs. M. A. Armstrong, of Blaydon, from the plans of Mr. M. H. Graham, architect, Newcastle (who is also captain of the Blaydon company), is estimated to cost about £1,500.

Trade News.

WAGES MOVEMENTS.

BELFAST.—In connection with the dispute between the Belfast builders and the carpenters and joiners, a conference was recently held, under the presidency of Sir James Muirgrave, Bart., when Councillor Robert Anderson submitted impartially a proposal from the employers that the old wage of 8½d. per hour should be paid, no reduction to be sought by the masters for the next two years, with a provision that in the event of an improvement in the building trade the employers would be prepared to consider the question of an advance. The proposals have been discussed by the men at a meeting of the Amalgamated Society, when it was unanimously resolved to reject the proposals and adhere to the terms originally demanded.

BIRMINGHAM AND DISTRICT BUILDING TRADES FEDERATION.—In their report on the six years' work of this Federation, the executive say that for four years they have been able to report a state of trade eminently satisfactory. The war has been one of the causes of a change for the worse, which has visited all the branches of the building industry in the district. The last year of the 19th century will, however, compare favourably with any since the federation came into existence. Two societies have been added to their number, the wood-carvers and the hot-water fitters, making the total sixteen, which is second to none in the Kingdom. Their relations with the master builders were never better. The working rules and wages now prevalent were not likely to be disturbed for at least another year. There is, however, a feeling that a uniform working time for all trades should be the rule, and efforts to bring this about will be made in the near future. Financially their position is good. Sevenpence a year per member has enabled them to manage the organisation, and to show a balance in the bank of more than £600.

A girls' department added to Northam Board School, Southampton, was opened last week. It has been built by Mr. H. Stevens, the architect being Mr. J. H. Blizard, also of Southampton.

The Duke of Cornwall and York has accepted an invitation to open the new Town-hall at Pietermaritzburg during his visit to Natal. The former town-hall, which was destroyed by fire on July 12, 1898, was illustrated in our issue of September 12 of that year, when we gave some details of the disaster written by Mr. Harry Hems, of Exeter. The edifice has been rebuilt from designs by its original architect, Mr. W. Street Wilson.

CHIPS.

The directors of Pitlochry Gaslight Company resolved, on Tuesday, to proceed with the erection of the new gasworks according to the plans prepared by Mr. Carlow, Arbroath, at a probable cost of £1,500.

Mr. Onslow Ford's bust of the late Sir George Grey is now complete, and will shortly be placed in the Crypt of St. Paul's Cathedral, where the ex-Colonial Governor was buried. The half-length portrait in oils by Professor Von Herkomer is also finished, and is about to be hung in the National Portrait Gallery.

The Lord Bishop of Sodor and Man (Dr. Stratton) reopened, on Sunday, Maughold Parish Church, after extensive alterations. The building is the oldest in the Isle of Man, and in the course of the repairs a number of antiquities of great interest have been found, and will in time be placed in the Manx Museum.

The Manchester Corporation has decided to apply for sanction to borrow £22,000 for the erection of a police-station in Mill-street, Bradford, and £6,000 for the erection of a fire-station in the same street.

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LIST OF COMPETITIONS OPEN.

Nottingham—Sewerage Scheme for the Parishes of Colwick-Goding and Burton-Joyce	C. J. Spencer, Clerk, Public Offices, Basford, Nottingham	Mar. 25
Keighley—Public Library, North-st. (limit £9,000; Assessor)	W. H. Hopkinson, A.M. I.C.E., Boro' Eng., Town Hall, Keighley	April 30
Ennis, Co. Clare—Addition, &c., to District Lunatic Asylum (limited to Irish Architects; Assessor)	John Enright, Clerk, Ennis District Lunatic Asylum, Co. Clare	June 10
Melton Constable—Mission Church (300 places)	The Rector, Melton Constable, Norfolk	—
Torquay—Illuminated Clock-Tower on the Strand	C. S. Wollen and S. Bulleid, Hon. Secs., 1, Lower-ter., Torquay	—

LIST OF TENDERS OPEN.

BUILDINGS.

Devonport—Extension of Premises	H. J. and E. A. Boulds	R. Hansford Worth, 42, George-street, Plymouth	Mar. 15
Southwaite—Byres, &c.	J. P. Donald	Donald and Tate Architects, 14, John-street, Workington	18
Reading—Caversham-road Presbyterian Church	Sanitary Committee	Lawton, 6, Forbury, Reading	18
Manchester—Stores at Monsall Hospital	James Osborne	The City Surveyor, Town Hall, Manchester	16
Ballymacreedy—Villa		W. J. Fennell, M.R.I.A.I., Scottish Provident Buildings, Belfast	16
Llanbadach—Hotel		Teather and Wilson, Architects, Andrew's Buildings, Queen-st., Cardiff	19
Highbury Vale, N.—Repairing Stonework of St. John's Church	Churchwardens	The Vicarage, St. John's Church, Highbury Vale, N.	16
Manchester—Joiners' Work, City Art Gallery	Art Gallery Committee	The City Surveyor, Town Hall, Manchester	16
St. Bees—Additions to Property		Spencer Thompson, Couderton	16
Summerhouse, Durham—Three Cottages	Lord Barnard	J. Lawett, Clerk of Works, Staindrop	16
Abercromby, Llandoverly—House	Dr. Edwards	Griffiths and Jones, M.S.A., F.S.I., Architects, Tonypandy	16
Blackburn—Spiritualists' Hall, St. Peter-street		Stones and Stones, Architects, 10, Richmond-terrace, Blackburn	16
Guildford—School for 240 Boys, Pewley Hill	National Schools Managers	William G. Lower, Architect, 12A, High-street, Guildford	16
Scarborough—Jubilee Primitive Methodist School		J. Caleb Petch, Architect, Scarborough	16
Bridlington—Stables, &c.	J. Burrell	J. Earnshaw, Architect, Wellington-road, Bridlington	16
Hayle—Stables and Residence	Mudge and Co.	Sampson Hill, Architect, Green-lane, Redruth	17
Kirkburton—Enlarging, &c. Vicarage	Corporation	William Watson, Architect, Barstow-square, Wakefield	17
Glasgow—Additions to Rutherglen-road Washhouse	Joseph Spindoon	J. Lindsay, Interim Clerk, City Chambers, Cochrane-st., Glasgow	19
Cardiff—Wash-house, Paradise-place		Veall and Sant, Architects, Cardiff	19
Hazel Grove, Stockport—Minister's House	School Board	J. A. Adhead, Secretary, Wesleyan Schools, Hazel Grove, Stockport	19
Bradford—Enlargement of Thornbury Board School	Rev. John Doherty	E. P. Peterson, 4, Sunbridge-road, Bradford	19
Altahaderry—School House		Edward J. Toye, Architect, Strand, Londonderry	19
Instagram—Converting Museum into Houses	Select Vestry	Wm. Carmichael, Parton, Whitehaven	19
Liverpool—Jobbing Repairs to Parochial Buildings (One Year)	School Board	H. J. Hagger, Vea. Clerk, Parish Offices, Brownlow Hill, Liverpool	19
Chesham—School, Rursar-street	Corporation	F. W. Croft, Archt., Victoria Chambers, Victoria-st., Gt. Grimsby	19
Whitehaven—Rebuilding 19, Church-street	Lancashire County Council	J. S. Moffat, M.S.A., 63, Church-street, Whitehaven	19
Preston—Alterations to Holme Slack Farm	Urban District Council	The Borough Surveyor, Town Hall, Preston	19
Inglewhite—County Police Station	Allen Beaumont	Henry Littler, Architect, County Offices, Preston	19
Ardleigh—Rebuilding Badley Hall Farmhouse and Stables		J. W. Start, F.S.I., Architect, Colchester	19
Farnworth—Car-Shed		Walter J. Lomax, Engineer, 11, Fold-street, Bolton	19
Royaton—Three Houses, &c., Overcarr-lane	Electrical Committee	Herbert Crawshaw, Architect, 13, Regent-street, Barnsley	19
Heaton—Four Houses and Shop	School Board	Rycoft & Firth, Architects, Bank Bldgs., Manchester-rd., Bradford	19
Bristol—Superstructure of Avonbank Electricity Works		H. Williams, Architect, 24, Clare-street, Bristol	19
Bradford—Additions to Keelham School, Thornton		Thos. Garbutt, Clerk, School Board Office, Manor-row, Bradford	19

BUILDINGS—continued.

Abersychan—Additions to Baptist Chapel	London & South-Western Ry. Co.	Hibberston, Fawcett, & Groves, Architects, 11, High-st., Newport Mar.	19
Southampton—Army Medical Stores at Docks	Urban District Council	John Dixon, Superintendent, Docks Department, Southampton	19
Raildon—House	School Board	Rhodes Culver, F.R.I.B.A., 1, Fort-st., Leeds	19
Carlton—Engine and Pump Houses	Metropolitan Asylums Board	R. Whitbread, M.S.A., Surveyor, Carlton, near Nottingham	19
Alford, N.B.—Alterations on Farmstead	Cwmaman Cottage Co., Ltd.	Coehran and Macpherson, Advocates, 192, Union-street, Aberdeen	19
Edmonton, N.—Junior Mixed School, Raynham-road	Park Building Club	H. W. Dobb, 54, London-wall, E.C.	19
Huddersfield—House, Somerset-road	Corporation	J. Berry, Architect, 9, Queen-st., Huddersfield	20
Brentwood—School	Gas Committee	C. and W. Henman, Architects, 61, Cannon-st., E.C.	20
Colne, Lancs.—Electric-Lighting Station, &c.	Corporation	T. H. Hartley, Borough Surveyor, Town Hall, Colne	20
Mitholmroyd—Public House	Joint Hospital District Committee	L. Carter, A.R.I.B.A., Yorks Bank Chambers, Wetherby-st., Halifax	20
Cwmaman—Six Houses	Gas Committee	J. Llewellyn, Smith, and Davies, Architects, Aberllyn	20
Blairgowrie—Enlargement of Manor Farmhouse, Marlee	Corporation	Anderson, Chapman, and Co., Solicitors, Blairgowrie	20
Mountain Ash—Thirty-six Dwelling-Houses	Gas Committee	Morgan and Elford, Architects, 1, Jeffrey-street, Maudlin Ash	21
Grimby—Volunteer Headquarters	Corporation	Frederick W. Croft, 87, Victoria Chambers, Grimsby	21
Cardiff—Offices at Fish Market	Corporation	W. Harpur, M.I.C.E., Borough Engineer, Town Hall, Cardiff	21
Manchester—Shed, &c., Bradford-road Station	Corporation	J. G. Newbigging, C.E., Rochdale-road Station, Manchester	21
Shipley—House, &c.	Corporation	William Wilcock, Architect, 9, Leeds-road, Bradford	21
Cardiff—Chimney Shaft (160ft.)	Corporation	W. Harpur, M.I.C.E., Borough Engineer, Town Hall, Cardiff	21
Sedburgh—Additions to Gillas House	Corporation	Stephen Shaw, F.R.I.B.A., Highgate, Kendal	21
Belper—Extension to Wards, &c., Isolation Hospital	Corporation	Hunter and Woodhouse, Architects, Belper	21
Manchester—Chimney, Bradford-road Station	Corporation	J. G. Newbigging, C.E., Rochdale-road Station, Manchester	21
Fort William—Isolation Hospital	Corporation	L. and J. Falconer, Architects, Fort William	21
Wimbleton—Additions to Electricity Station, Durnsford-road	Corporation	The Surveyor's Office, The Broadway, Wimbleton	22
Bolton—Enlargement of Head Post-Office	Corporation	The Secretary, H.M. Office of Works, Storey's Gate, S.W.	22
Newtownards—Alterations to Retort House	Corporation	William Heron, Clerk, Newtownards	22
Feltham—Infant School, Cardinal Estate	Corporation	W. Ralph Low, Architect, 10, Basinghall-street, E.C.	22
Charm—Alterations and Additions to Furnham Schools	Corporation	A. W. Yeomans, M.S.A., Architect, Chard, Somerset	23
Ogmore Vale—Altering, &c., Craigrhiglyn Schools	Corporation	Jacob Rees, Architect, Pentre Rhodda	23
Abby-de-la-Zouch—Girls' School and Head Mistress's House	Corporation	Barrowcliff and Alcock, Architects, Loughborough	23
Probus—Wesleyan Day School	Corporation	Sampson Hill, Architect, Green-lane, Redruth	23
Chard—Alterations and Additions to Buildings, Cornhill	Corporation	A. W. Yeomans, M.S.A., Architect, Chard, Somerset	23
Norton Lees—School	Corporation	J. Norton, Architect, Alliance Chambers, George-street, Sheffield	25
Hornsey, N.—Chimney-Shaft, Tottenham-lane	Corporation	E. J. Lovegrove, Surveyor, Southwood-lane, Highgate-lane, N.	25
Leeds—Vagrant Wards, Beckett-street	Corporation	Thomas Winn and Sons, Architects, 92, Albion-street, Leeds	25
Elland—Public Baths, South House Estate	Corporation	George Hepworth, Architect, 20, Bradford-road, Brighouse	25
Newport, Mon.—Power-House Foundations	Corporation	R. H. Haynes, Borough Engineer, Newport, Mon.	25
Ditchampton—Cottage at Pumping Station	Corporation	H. J. King, Town Clerk, Municipal Offices, Russell-st., Wilton	25
Thorner—Two Semi-Detached Houses	Corporation	Henry Walker, Architect, 8, Upper Fountain-street, Leeds	25
Cherry Tree, Blackburn—Goods Warehouse	Corporation	The Engineer's Office, Hunt's Bank, Manchester	26
Whitley—Rebuilding Briar Dene Hotel	Corporation	Joseph Potts and Son, Architects, 57, John-street, Sunderland	26
Dublin—New Buildings at Workhouse	Corporation	J. Morris, Clerk of Works, North Brunswick-street, Dublin	27
Bishop Auckland—Permanent-Way Shops	Corporation	Wm. Bell, Architect, Central Station, Newcastle	27
Catchgate—Cementing Teacher's Residence	Corporation	Thos. Wilson, Architect, 121, Durham-road, Blackhill	27
Hackney, N.E.—Wharf, &c.	Corporation	Robert Hammond, M.I.C.E., 64, Victoria-street, Westminster	28
Hull—Destructor Buildings, West Dock-street	Corporation	A. E. White, City Engineer, Town Hall, Hull	29
London, N.W.—Orphanage, 108, Hampstead-road, N.W.	Corporation	Sydney G. Goss, 3, Broad-street Buildings, E.C.	30
Whitehead—Premises	Corporation	John Russell, Architect, 22, Waring-street, Belfast	30
Chester—Enlargement of School	Corporation	W. E. Milton, Clerk, Chew Magna	30
Wimlow—Police Station	Corporation	H. Bewick, County Architect, Newgate-street, Chester	April 1
Brede—Cottage Villa	Corporation	Thomas Reid, Architect, Conster Manor House, Brede, Sussex	8
Sudbury, Suffolk—Police Station and Quarters	Corporation	Frank Whitmore, Architect, Chelmsford	10
Clown—Lock-Up	Corporation	J. Somes Storey, County Sur., County Offices, St. Mary's Gate, Derby	14
Middlebrough—Semi-Detached Villas, Phillipsville Estate	Corporation	A. F. Newsome, M.S.A., Architect, Albert-road, Middlesbrough	19
Sherburn-in-Elmet—House	Corporation	J. M. Fawcett and Son, Architects, 26, Albion-street, Leeds	20
Colchester—Six Houses, Harnett-road	Corporation	J. W. Start, F.S.I., Architect, Colchester	20
Weybourne-on-Sea—Weybourne Springs Hotel	Corporation	R. Carter, Architect, Cromer	20
Stanley—Hotel, Front-street	Corporation	T. Ernest Crossing, Architect, Stanley, Durham	20
Leeds—Alterations to Masons' Arms	Corporation	G. Fredk. Bowman, Architect, 5, Greek-street, Leeds	20
Talybont-on-Usk, Mon.—Alterations to Benaiah Chapel	Corporation	J. Yorath, Maesmawr, Talybont, Mon.	20
Harbledown—Two-Kiln East, Brotherhood Farm	Corporation	W. J. Jennings, Architect, 4, St. Margaret's-street, Canterbury	20
Staleybridge—Liberal Club, Mottram-road	Corporation	J. Eaton, Sons, and Cantrell, Architects, Ashton-under-Lyne	20
London, E.C.—Warehouse Block, Old-street	Corporation	Alex. Gordon, M.S.A., Architect, 107, Queen Victoria-street, E.C.	20
Hull—Rebuilding Wheatsheaf Hotel, Prospect-street	Corporation	Freeman, Son, & Gaskell, Architects, Albert Chambers, Carr-lane, Hull	20
Carlisle—Hotel, Castle-lane	Corporation	Castiglione and Gibbins, 31, Lowther-street, Carlisle	20
Newchurch, Lancs.—Cottage	Corporation	F. J. Hobson, Architect, King-street, Rawtenstall	20
South Hindley—Two Cottages	Corporation	George Moxon, Architect, 26, Church-street, Barnsley	20
York—Alterations to Branch Stores, Haxby-road	Corporation	Athron and Beck, Architects, Doncaster	20
Nottingham—Motor-Car Works, Canal-street	Corporation	W. D. Pratt, Architect, Cauldon Chambers, Long-row, Nottingham	20
Heath, Chesterfield—Cottages (79)	Corporation	W. M. Ashmore, Architect, New Queen-street, Chesterfield	20
Waterfoot—Enlargement, &c., St. James' School	Corporation	Rev. J. T. Munn, Vicarage, Waterfoot	20
Oulton—Coalhouse at Workhouse	Corporation	Alfred Clarke, Architect, 126, London-road, Lowestoft	20
Bedlinog—Cottage	Corporation	J. Radford, Gwythwynt, Bedlinog	20
York—Four Houses and Shop, Balmoral-terrace	Corporation	Athron and Beck, Architects, Doncaster	20
Mosley—Rebuilding St. George's Vicarage	Corporation	John Brooke, A.R.I.B.A., 18, Exchange-street, Manchester	20
Bury, Lancs.—Shop and Offices, Fleet-street	Corporation	Openshaw and Gill, Architects, 6, Fleet-street, Bury	20
Newcastle-on-Tyne—Rebuilding Theatre Royal	Corporation	Joseph Carr, Secretary, 41, Mosley-street, Newcastle-on-Tyne	20
Hollinwood—Terracotta and Steel Work for New School	Corporation	J. Hilton, Architect, 36, Clegg-street, Oldham	20
Wombwell—Three Houses, Hough-lane	Corporation	Jno. Robinson, Surveyor, Wombwell, Yorks	20
Somerkeates—Additions to Premises	Corporation	Percy B. Houghton, Architect, Furnival Chambers, Chesterfield	20
Castleford—House, Red Hill	Corporation	Garside and Pennington, Architects, Castleford	20
Harrogate—Detached House, Duchy Estate	Corporation	Bland and Bown, Architects, Harrogate	20
St. Mellon's, Wales—Two Cottages	Corporation	S. Rooney, 9, Quay-street, Cardiff	20
Great Yarmouth—New Premises, South Dunes	Corporation	George Waller, Architect, Middlegate-street, Great Yarmouth	20
Manorhamilton—House	Corporation	A. A. Algeo, Manorhamilton, Ireland	20
Whitehaven—Rebuilding No. 19, Church-street	Corporation	J. S. Moffat, M.S.A., Architect, 53, Church-street, Whitehaven	20
Egremont—New Tower to St. Mary's Church	Corporation	Oliver and Dodgshun, F.R.I.B.A., Architects, Carlisle	20
Stanley—Hotel, Front-street	Corporation	T. Ernest Crossing, Architect, Front-street, Stanley, Durham	20
Moor-Allerton—Two Houses, Shadwell-lane	Corporation	J. E. Preston, Architect, 8, Allerton-terrace, Chapel-Allerton	20
Hull—Additions to 63 and 65, Spring Bank	Corporation	T. Brownlow Thompson, 15, Parliament-street, Hull	20
Cardenden—Two Blocks of Tenements	Corporation	Williamson and Inglis, Architects, Kirkcaldy	20
Lichfield—Two Semi-Detached Villas	Corporation	J. W. Godderidge, Architect, 4, Bolebridge-street, Tamworth	20
Kendal—Congregational Sunday Schools, Lowther-street	Corporation	John Hutton, M.S.I., Architect, Kendal	20

ELECTRICAL PLANT.

Edinburgh—Electrical Stores (One Year)	Corporation	The Resident Elec. Engineer's Office, Dewar-place, Edinburgh	Mar. 16
Shipley—Electrical Fittings	Urban District Council	J. S. Rhodes, Clerk, Manor House, Shipley, Yorks	19
Fulham, S.W.—Electrical Stores, &c. (One Year)	Borough Council	W. H. J. Denselow, Town Clerk, Town Hall, Waltham Green, S.W.	20
Ayr—Electric Lighting Plant	Corporation	A. G. Young, Town Clerk, Town Buildings, Ayr	20
Fulham, S.W.—Wiring Central Library, 592, Fulham-road	Borough Council	W. H. J. Denselow, Town Clerk, Town Hall, Waltham Green, S.W.	20
West Ham—Electrical Supplies	Town Council	The Boro' Elec. Eng.'s Office, Central Electricity Station, West Ham	22
Colwyn Bay—Dynamo, &c.	Urban District Council	Lacey, Clirehugh, & Sillar, 2, Queen Anne's Gate, Westminster	22
Cheltenham—Electric Light Installation, St. John's Church	Electricity Committee	J. Weaver, Carlton-place, Hewlett-street, Cheltenham	25
Manchester—Switchboard, &c.	Corporation	F. E. Hughes, Sec. Elect. Depart., Town Hall, Manchester	25
Warrington—Electric Tramways	Corporation	Freese and Cardew, 13, Queen Anne's Gate, Westminster, S.W.	27
Sunderland—Cables, &c. (One Year)	Corporation	J. F. C. Snell, Boro' Elect. Eng., Dunning-street, Sunderland	29
Amsterdam—Electrical Plant, &c.	The Burgomaster	The Direction of Printing Works, Achterburgwal 213, Amsterdam	April 1

ENGINEERING.

Bollington—Pipe-Laying, &c. (2½ miles)	Urban District Council	W. H. Radford, C.E., Albion Chambers, King-street, Nottingham	Mar. 16
Cunsough, Lancs.—Rebuilding Bridge	Lancashire County Council	W. Compton Hall, County Bridgemaster, County Offices, Preston	16
Trowbridge—Heating and Ventilating Technical Institute	Lancashire County Council	H. Ledbury, Sec., Timbrell-street, Trowbridge	16
Rakefoot, Lancs.—Bridge Works	Corporation	W. Compton Hall, County Bridgemaster, County Offices, Preston	16
Lowestoft—Removal of Old Sewer Outfall at Ness Point	Corporation	G. H. Hamby, A.M.I.C.E., Boro' Engineer, Town Hall, Lowestoft	16
Bredbury—Effluent Works	Town Council	William Spinks, Engineer, 20, Park-row, Leeds	18
Dundee—Sea-wall (880 yards)	Urban District Council	Wm. Mackison, C.E., Municipal Offices, Commercial-street, Dundee	18
Bangor—Water Mains	Urban District Council	E. L. Woods, C.E., Bangor, Ireland	18
Oswestry—Septic Tank at Workhouse	Incorporation Directors	E. Bremner-Smith and Bremner, C.E.'s, Oswestry	18
Cardiff—Steam Pipes, &c.	Corporation	Arthur Ellis, M.I.E.E., Old Post Office Buildings, Cardiff	18
Beifast—Three Timber Jetties, Musgrave Channel	Harbour Commissioners	G. F. L. Giles, Harbour Engineer, Belfast	18
Llanfair and Welsphool—Light Railway (about 9 miles)	Cambrian Railways Co.	A. J. Collin, Engineer, Oswald-road, Oswestry	19
Carlisle—Archway through Eden Bridge	Corporation	Henry C. Marks, A.M.I.C.E., City Eng., 36, Fisher-street, Carlisle	19
Swinton—Gas-Engine	Urban District Council	R. Fowler, Surveyor, Swinton, near Rotherham	20
Pontypool—Widening and Repairing Bridge over Afon Llywd	Urban District Council	David J. Lougher, Engineer, Bank Chambers, Pontypool	20
Colne, Lancs.—Footbridge, Phillips-lane	Electrical Committee	T. H. Hartley, Borough Surveyor, Town Hall, Colne, Lancs	20
Little Alne—Alterations to Horse Bridge over River	Alcester Rural District Council	Charles Gander, Surveyor, Alcester	20

ENGINEERING—continued.

Direston—Widening Gallows Inn Bridge	Derbyshire County Council	J. Somes Story, County Surveyor, County Offices, Derby	Mar. 2
Pentre—Steam Road-Roller 10-ton and Scarifier	Rhondda Urban District Council	W. J. Jones, Surveyor, Council Offices, Pentre R.S.O., Glam	19
Harrogate—Steam Roller 12-ton and Scarifier	Corporation	F. Bagshaw, Borough Engineer, Municipal Offices, Harrogate	19
Clitheroe—Water-Supply Works at Sadden	Rural District Council	John Eastham, Clerk, Church-street, Clitheroe, Lancs	19
Manchester—Steel Lancashire Boiler, Bradford-road Station	Gas Committee	C. Nickson, Supt., Gas Department, Town Hall, Manchester	19
Buxton—Steel Gas-holder Tank and Teleopic Gas-holder	Gas Committee	Harold Barker, Gas Engineer, Town Hall, Buxton	19
Newport, Mon.—Constructional Steelwork, &c.	Corporation	H. F. Parshall, Consulting Engineer, 8, Princess-street, Bank, E.C.	19
West Ham—Steam Road-Roller 10-ton	Corporation	The Borough Engineer's Office, Town Hall, West Ham	19
Shropshire—Iron Storage Tanks, Laying Mains 3,100 yd., &c.	Urban District Council	Harold Harris, Surveyor, Clarence-street, Southend	19
Kettering—Refuse Destructor	Urban District Council	T. Reader Smith, Surveyor, Market-place, Kettering	19
Dorchester—Sewage Purification Works	Town Council	G. J. Hunt, Borough Engineer, Guildhall, Dorchester	19
Guildford—Steel Arch Bridge	Corporation	John J. Webster, M.I.C.E., 39, Victoria-street, Westminster, S.W.	19
Penryn—Harbour Works	Harbour Authority	J. Partridge, C.E., Engineer, Town Hall, Penryn, Cornwall	19
St. Albans—Bacterial Beds, &c. (6,900 yards)	City Council	Beesley, Son, and Nichols, 11, Victoria-street, Westminster, S.W.	19
Crosthwaite—Widening Smithy Bridge	Cumberland County Council	Geo. Jos. Bell, County Surveyor, The Courts, Carlisle	19
Smithwaite—Stone Bridge across St. John's Beck	Cumberland County Council	Geo. Jos. Bell, County Surveyor, The Courts, Carlisle	19
Southwick—Steel and Iron Work for Electrical Power House	Brighton Town Council	F. J. Tillstone, Town Clerk, Town Hall, Brighton	19
Rosario—Harbour Works	Argentine Government	The Commercial Department of the Foreign Office, Whitehall, S.W.	19
Brandon—Heating Co-operative Stores	Nevin Bay Granite Quarry, Ltd.	Wm. Perkins, M.S.A., Architect, Bishop Auckland	19
Nevin—Sea-wall (200ft.) and Dock Enlargement	Guardians	Smith and Sidebotham, C.E., 1, Princess-street, Manchester	19
Woolston, Southampton—Extension of Jurd's Wharf	Corporation	E. Cooper Poole, A.M.I.C.E., 4, Portland-street, Southampton	19
Newhaven—Pile Driving, &c.	Guardians	F. J. Rayner, Engineer, 8, High-street, Newhaven, Sussex	19
Bethnal Green, N.E.—Condenser, &c.	Corporation	The Engineer, Steward's Office, Infirmary, Cambridge-road, N.E.	19
Edinburgh—Coal Elevator, Portobello Power Station	Corporation	Colam and Cooper, Engineers, 57, Henderson-row, Edinburgh	19

FENCING AND WALLS.

Dudley—W.I. Tubular Unclimbable Fencing	Estates Committee	John Gammage, Borough Surveyor, Town Hall, Dudley	Mar. 15
Blackhill—Fence Walls, &c., at Cemetery	Joint Burial Board	G. T. Wilson, Architect, 121, Durham-road, Blackhill, Durham	19
Salford—Unclimbable Railings (365 yards)	Parks Committee	L. C. Evans, Town Clerk, Town Hall, Salford	19
Eastleigh—Boundary Wall and Railings	Eastleigh and Bishopstoke U.D.C.	W. Stringfellow, C.E., Surveyor, Leigh-road, Eastleigh	19
Buxton—Retaining Wall, &c., at Gasworks, Ashwood Dale	Gas Committee	Harold Barker, Gas Engineer, Town Hall, Buxton	19

FURNITURE AND FITTINGS.

Widnes—Infectious Diseases Hospital	Corporation	H. S. Oppenheim, Town Clerk, Town Hall, Widnes	Mar. 16
Loughrea—Twelve Iron Bedsteads, &c., for Hospital Use	Guardians	Laurence Conway, Clerk, Loughrea, Ireland	19
Goldsmithy—Rescating Wesleyan Chapel	Directors	Rev. P. M. Phillips, Goldsmithy, Marazion	19
Newport, Mon.—New Hospital	Directors	J. K. Stone, Secretary, 26, Dock-street, Newport, Mon.	19
Blackpool—Benching St. Cuthbert's Church	Directors	James H. Mangan, Architect, Church-street, South Shore	19

PAINTING.

Kirkburton—Vicarage	Baths Committee	Wm. Watson, Architect, Barstow-square, Wakefield	Mar. 17
Accrington Baths	Corporation	The Borough Engineer's Office, Town Hall, Accrington	19
Glasgow—Rutherglen-road Washhouse	Trustees	J. Lindsay, Interim Clerk, City Chambers, Cochrane-st., Glasgow	19
Neath—Zoar Chapel	Mitchell, Toms, and Co., Ltd.	David Morgan, Architect, 24, Alfred-street, Neath	19
Seaton Junction—Shute Arms Hotel	School Board	A. W. Yeomans, M.S.A., Architect, Chard, Somerset	19
Norton Lees—School	Guardians	Joseph Norton, Architect, Alliance Chambers, Sheffield	19
Tremain—Ffynonbedr Independent Chapel	Urban District Council	J. Williams, Trefere, Wales	19
Leeds—Vagrant Wards	Urban District Council	T. Winn and Sons, Architects, 92, Albion-street, Leeds	19
Elland—Public Baths, South House Estate	Urban District Council	G. Hepworth, Architect, 20, Bradford-road, Brighouse	19
Brantley—Parish Church	Urban District Council	The Rev. Gordon Scott, Brantley Glebe, Danganoo	19
Littleborough—Four Houses	Urban District Council	R. Norbury, 4, Queen's Road-terrace, Littleborough, Lancs	19

PLUMBING AND GLAZING.

Belfast—Plumbing Work (One Year)	Corporation	The Supt. of Works Office, Townhall-street, Belfast	Mar. 19
Fulham, S.W.—Plumbing Work (One Year)	Borough Council	W. H. J. Denselow, Town Clerk, Town Hall, Waltham Green, S.W.	19
Blaigowrie—Manor Farmhouse, Marlee	Borough Council	Anderson, Chapman, and Co., Solicitors, Blaigowrie	19

ROADS AND STREETS.

Blackpool—Street Works	Highways Committee	The Surveyor's Office, Town Hall, Blackpool	Mar. 14
Wigton—Road Maintenance (One Year)	Rural District Council	W. Brown, Surveyor, Bank, Wigton, Cumberland	19
Swindon—Road Works	Corporation	H. J. Hamp, Borough Surveyor, Town Hall, Swindon	19
Kingstown—Concrete Pavement (1,100 yards), Harbour-road	Urban District Council	John Donnelly, Town Clerk, Town Hall, Kingstown, Ireland	19
Acton—Paving on Main Road, Footpaths	Middlesex County Council	H. T. Wakelam, County Engineer, Guildhall, Westminster, S.W.	19
Sunbury-on-Thames—Kerbing, &c.	Urban District Council	Harold F. Coates, Surveyor, Sunbury-on-Thames	19
Leith—Paving Works	Town Council	The Borough Surveyor's Office, Town Hall, Leith, N.B.	19
Warrington—Street and Passage Works	Paving and Sewage Committee	Thomas Longdin, Borough Surveyor, Town Hall, Warrington	19
Hale—Paving Works (1,700 yards)	Urban District Council	F. J. Lobley, A.M.I.C.E., Surveyor, Albert-rd., Hale, nr Altrincham	19
Tynemouth—Laying Cement Concrete Footpaths	Corporation	John F. Smillie, Borough Surveyor, Tynemouth	19
Walsall—Roadmaking, &c.	Corporation	The Borough Surveyor's Office, Bridge-street, Walsall	19
Southall—Wood-Paving Works	County Highways Committee	H. T. Wakelam, County Engineer, Guildhall, Westminster, S.W.	19
Horwich—Reconstructing Chorley New-road	Urban District Council	The Surveyor, Public Hall, Horwich, Lancs	19
Stockport—Private Street Works	Highways and Sewers Committee	J. Atkinson, A.M.I.C.E., Borough Surv., St. Petersburg, Stockwell	19
Greenwich—Paving Portion of Ashburnham-road	Borough Council	The Borough Engineer's Office, Town Hall, Greenwich	19
Leeds—Excavating for Five Streets	Victoria Freehold Building Assoc.	Albert E. Dixon, A.R.I.B.A., 5, Park-lane, Leeds	19
Reading—Making-up Lynmouth-road	Sanitary Authority	John Bowen, Borough Engineer, Town Hall, Reading	19
Sowerby Bridge—Re-forming Causeway, Watson-lane	Urban District Council	W. Clement Williams, Architect, 29, Southgate, Halifax	19
Great Harwood, Lancs—Making-up Streets and Roads	Urban District Council	R. Chippendale, Clerk, Town Hall, Great Harwood, Lancs	19
Blaigowrie—Forming and Macadamising Streets	Rural District Council	George Cunison, Burgh Surveyor, Blaigowrie, N.B.	19
Hornsworth and Kippings—Two Roads	Urban District Council	T. H. Richardson, Surveyor, Hemsworth, near Wakefield	19
Elland—Paving Saddleworth-road	Urban District Council	P. H. Whitman, Council Offices, Elland, Yorks	19
Beckenham—New Approach Roads to Three Way Bridge	Urban District Council	John A. Angel, Surveyor, Beckenham	19
Hornsey—Making-up Campbourne High-street	Urban District Council	E. J. Hardgrove, Engineer, 99, Southwood-lane, Highgate, N.	19
Burgess Hill—Road Works	Urban District Council	A. F. Hardwick, Clerk, Church-road, Burgess Hill	19
Sale—Asphalting Footpaths (1,500 sq. yd.)	Urban District Council	David Halliwell, Clerk, Council Offices, Sale, Cheshire	19
Whitwood Mere—Making Marchant, School, Cross, & Moss-ests.	Urban District Council	A. Hartley, Surveyor, County Chambers, Castleford	19
Crosthwaite—Road Works	Cumberland County Council	Geo. Jos. Bell, County Surveyor, The Courts, Carlisle	April 11
Ollerton, Newark-on-Trent—Roadmaking and Repairing	Rufford Hunt Committee	H. Hill, Thoresby Park, Ollerton, Newark	19

SANITARY.

Evesham—Three New Culverts	Rural District Council	Edward Wadams, Clerk, Union Offices, Evesham	Mar. 16
Sandiacre—Sewer, Stanton-lane	Shardlow Rural District Council	Gorman and Ross, Architects, Sandiacre, near Nottingham	19
Rugeley—Sewers, &c.	Urban District Council	Pritchard, Green, and Co., Engs., 87, Waterloo-st., Birmingham	19
Hale—Sewers	Urban District Council	F. J. Lobley, Engineer, A.M.I.C.E., Albert-road, Hale, Cheshire	19
Prestwich—Sewering and Paving Robert-street	Urban District Council	L. A. Orford, Clerk, Bury New-road, Prestwich	19
Rutherglen—Sewers	Town Council	Warren and Stuart, C.E.'s, 115, Wellington-street, Glasgow	19
Port Glasgow—Drainage Works	Town Council	W. R. Copland, C.E., 146, West Regent-street, Glasgow	19
Islington, N.—Drainage Works at Relief Offices	Special Drainage Committee	Wm. Smith, Architect, 65, Chancery-lane, W.C.	19
Crookholm—Sewers and Sewage-Disposal Works	Sanitary Committee	John Sturrock, jun., C.E., 2, Market-ane, Kilmarnock	19
Manchester—Circular-Backed Urinal Stalls	Emsworth Rural District Council	The City Surveyor, Town Hall, Manchester	19
South Kirkby—Sewer Extension, Mill-lane	Town Council	T. H. Richardson, Surveyor, Hemsworth, near Wakefield	19
Lymington—Sewer Outfall Repairs	Town Council	J. Pym Jones, Borough Surveyor, 83, High-street, Lymington	19
Manchester—Three Public Urinals	Sanitary Committee	The City Surveyor, Town Hall, Manchester	19
Woodford-cum-Membris—Sewerage Works	Daventry Rural District Council	J. B. Williams, Engineer, Moot Hall, Daventry	19
Fulham, S.W.—Drainage Works	Borough Council	J. C. Jackson, D.P.H. (Camb.), Town Hall, Waltham Green, S.W.	19
Pontardawe—Sewerage Works	Rural District Council	J. Morgan, Engineer, Herbert Chambers, Pontardawe	19
Ulford—Five Sewers	Urban District Council	R. Collins, Surveyor, Court House, End-ld	19
Minster—Drainage Works at Infirmary	Isle of Thanet Union Guardians	Leonard Grant, Architect, Sittingbourne	19
Twickenham—Sewers, Hartington-road and Amyand Park-road	Urban District Council	Fred. W. Pearce, Surveyor, Town Hall, Twickenham	19
Dorchester—High and Low Level Main Intersecting Sewers	Town Council	G. H. Hunt, Borough Engineer, Guildhall, Dorchester	19
Eastleigh—Sewerage Works	Urban District Council	H. Russell, Town Clerk, 1, Market-street, Litchfield	19
New Forest Sewers	Basford Rural District Council	S. Maylan, Surveyor, Public Office, Basford, Notts	April 1
Hipperholme—Sewage Tank	Urban District Council	G. H. Elliott, Architect, Lightcliffe	19

STEEL AND IRON.

Bollington—Cast-Iron Pipes (2½ miles of 3in. and 4in.)	Urban District Council	W. H. Radford, C.E., Albion Chambers, King-street, Nottingham	Mar. 16
Glasgow—C.I. Pipes 40 tons	Corporation	James M. Gale, Engineer, Water Dept., 45, John-street, Glasgow	19
Christiana—Sleeper Plates 38,000	Norwegian State Railways	The Railway Manager's Office, Christiania	19
London, E.C.—Cast-Steel Axles, &c.	Benzel-Nagour Railway Co., Ltd.	The Company's Office, 12, Gresham House, Old Broad-street, E.C.	19
Christiana—Axles and Wheels 476, Wheel-Rims 240	Norwegian State Railways	The Railway Station Offices, Christiania	19
Elland—Iron and Steel Work for Public Baths	Urban District Council	The Railway Director's Office, Christiania	19
Scotham—Asphalted C.I. Flange Pipes (3,000 tons)	Dutch Ministry for Colonies	G. Hepworth, Architect, 20, Bradford-road, Brighouse	19
Dundee—Steel Guide Rails (1,540 tons), Fishplates (60 tons)	Town Council	Martinius Nyhoff, Bookseller, The Hague	19
		Wm. Mackison, C.E., Engineer, 91, Commercial-street, Dundee	19

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PROFESSIONAL EDUCATION AND PRACTICE.

AN attempt has been made by many who inculcate the principles of architecture and of education amongst the younger members of the profession, to elevate the subject, and to lift the teaching of the art to a higher plane. Some professors and instructors of the art dwell on the questions of beauty and of taste, others speak of the need of cultivating the imagination, of artistic inspiration, of the importance of the study of nature, of proportion, of colour. In an essentially prosaic profession it is necessary to dwell on the higher ideas and attributes of art in the abstract. Building in itself is particularly practical and utilitarian, and a mind absorbed in bricks and mortar, measurements, and the every-day requirements of construction, cannot rise always to the occasion or to the "high calling" of art. The ordinary building mind has a tendency to fall to the level of the workman, to become so engrossed in matters of detail as to become narrow and excessively matter-of-fact in everything else. Nothing can be so engrossing as building construction and the practice of measuring or estimating builders' work: they are exercises which give the mind or the imagination very little desire or aptitude for the artistic side of the architect's vocation. There is nothing in such work to inspire the emotions or give wing to the imagination. We cannot wonder, then, at the great cleavage there is between the practical and the art following of the profession, and why it is so hard for an architect who has once obtained a general every-day practice with a fair sprinkling of surveying and quantity-taking, to turn his attention to buildings of a monumental or artistic character; nor can we be surprised to find his earlier taste for art losing its keenness as the duties of practical life increase, and with it the absorbing attention to details. Mr. Emerson, in his address to students the other day, spoke of the value of methodical habits as tending to the avoidance of worry, than which there is nothing so prejudicial to artistic effort. A worried brain is too restless to concentrate attention on any work of this kind. For creative efforts and the thought necessary in conception, the mind should be perfectly easy and at rest. No great work or design has ever been done in a hurry: it cannot be forced, but must come as a spontaneous effort of the mind, the reason why the busy architect with a large practice is so often feeble and commonplace in his designs and details, while many of the most able designs and the happiest conceptions have been produced by men with leisure. These considerations invite us to inquire whether our modern architectural practice is the best for the development of gifts of a high order? It will be argued by some that the art function is better practised by men who can confine their whole time and attention to art, and that in the case of architecture these functions may be divided—there may be designers of churches and monuments, of secular and commercial, of domestic buildings, and so on. They would separate the designer from the practical builder; but such a distinction has been to some extent in force. There has been an unreality about such a division, and it has to a large degree contributed to make the practical man more forgetful of art, and to loosen the bond between it and building. Nor has it done anything to elevate the designing of buildings

as a special science. Then we take a number of commissions, including many given to the leading men of the profession, who receive their 5 per cent. for works of a very diverse kind. Can it be honestly said that art improves by multiplying the number of its applications? We think not. Is it not better that an architect should bring his art into touch with a certain class of buildings, so that he may be able to throw his energies into certain channels, that his best thought and artistic skill may be devoted to his purpose? We know that there was no separation between designing and building amongst the old masters;—the designer and builder went together, though the scope of his work was limited. He did not tackle houses and shops and churches and hospitals as the modern architect does, but expended his best thought and art in the design and execution of buildings that have been models for all time. By making materials and construction the vehicle of his art in one or two directions, he overcame the modern danger of lapsing into a mere prosaic builder or unreal draughtsman. His work was inspired by a common enthusiasm; his aspirations were kindled with the desire to express the thought and requirements of his age in his buildings. Now it is otherwise: the architect becomes either an expert building surveyor or a mere designer of buildings in general. If we complain of the prosaic, matter-of-fact tendency of our practice it is chiefly because we have not learned to understand and appreciate this wholesale kind of practice—the reaction there exists between craftsmanship and building. We have considered them as distinct too long, and our method of teaching has been largely at fault in promoting the study of architectural style apart from building.

The education question has been urged from opposite standpoints. There are those who would make it a compulsory pressure from without, and those who would inculcate the instruction of the student from his own internal convictions without pressure. The great majority of those who enter the profession are accidentally thrown into it. The old architects—those who have left their works and their mark during the Middle Ages and the Renaissance, to say nothing of the ancient practitioners—were men who had an intuitive gift for the work, or at least the bulk of them. Beyond their apprenticeship to certain crafts, there was nothing compulsory about their education—they learned the traditions handed down from father to son. But the conditions of modern architectural practice have changed;—it now becomes necessary to qualify those who enter the profession as a living, but have no particular penchant. The ranks of the profession have multiplied enormously since the days of the early pioneers of the Italian Renaissance in this country. Many of the great architects of the 15th, 16th, and 17th centuries and later were more amateurs than professional men, and they practised the art for the love they had for it. With them a compulsory examination, or even a curriculum of knowledge was not required, nor even thought of. It has been reserved for the 20th century to "manufacture" architects: they are no longer all born artists as formerly. Hence the necessity of providing schools and establishing sources of instruction. One experiment is worth noticing here. The proposed Architectural Association Day-Classes are arranged to give pupils, or those about to enter offices, a preparatory or supplementary course of instruction, and for this purpose the Studio of the Association is to be opened during the day, and new classes are to be established. The scheme has been guaranteed by some of the leading members, and there is every prospect of its success. A one year's course includes in-

struction in the elements of architectural knowledge, the use of instruments and scales, freehand drawing, the Five Orders of Classic Architecture, the elements of the various styles, elements of mechanics and construction, sketching and measuring details of buildings, a course of lectures on the history of architecture, illustrated by visits to buildings and museums, lectures on elementary construction and materials, illustrated by visits to workshops and buildings in progress. We believe these facilities afforded to pupils in offices to acquire supplementary instruction is in the right direction. They will assist the pupil to educate himself in the elements of his profession—to supplement his office training. A second year's course will comprise perspective, descriptive and applied geometry, graphic statics, principles of architectural design and other subjects, and a course of reading directed by the master of the studio will be given. These day-classes promise to supply the deficiencies in the education of the ordinary pupil by helping him to complete or supplement his studies, of which he feels the need. The process of education that is the most beneficial is that which realises our requirements or comes from within: it begins in the pupil, and develops with his requirements. It does not force upon him subjects for which he is not prepared, and for which he has little sympathy, such as course of mathematics, languages, lectures on ancient history, or the like. The official curriculum is of value to the university student who is going in for a complete course; but the ordinary architectural pupil is not prepared for it. If the Association scheme of day-classes can be made to show him that he may carry on his office duties and his classes side by side—that one is really supplementary to the other, we have no doubt of its success. At present the pupil is apt to look upon the collegiate courses provided for him as something quite apart from his daily work—as completely outside the profession. Instructors have to get rid of this notion—to show that architectural work and education can go hand in hand. Technical schools have failed to enlist the class of men they were intended to help, because they have tried to give the building apprentice and workman too much at first, and he does not see at once the connection there is between his work and the studies put before him. From these considerations we are disposed to regard the individual system of instruction as the right one for the pupil. The academic system is justified when the pupil has ample time and means. Mr. Arthur Cates's very useful summaries of the systems pursued in the leading Continental and American universities, and to which we have referred, afford opportunities to students who are limited in their time. They can take up certain courses and leave others. The American methods of instruction seek to bring out and develop the student's powers by showing the application of theory to practice, and the useful lists of subjects of different American universities given by Mr. Cates will be found in the *Institute Journal* for last year. The American systems of education differ; but they all agree on the necessity of a preliminary education before beginning the four-year course of special study; also on the value of a continuous study of drawing and design. According to a table giving the percentage of time devoted to certain groups of studies, it appears that mathematics and construction occupy very different proportions of time. At the Massachusetts Institute 36 per cent. of the time is taken during the first year; in Cornell University only 25 per cent. is given during the third year; Illinois devotes 42 per cent. during the first two years. In architectural drawing and design on the average about half the time is absorbed, though the percentage varies. In nearly

all these courses we find that construction, as the basis of architecture, holds a large place. Great stress is laid on continued practice in design and drawing, and the principles of the art. Preliminary technical instruction begins during the first year, and is continued through the remaining term. During the second year in Harvard University, elementary design, structural and architectural, is taught, and during the third year architectural design and the artistic treatment of materials, besides the theory of design. Thus we find that the student begins to learn the elements of his art in a technical and special manner directly he joins the courses, and that these increase in technical directness of application to building during the last year.

A serious omission in some of the architectural courses we have seen is the neglect of the special principles of architecture. The submission of designs of buildings does not teach the student the elements of construction, or such artistic matters as composition, proportion, grouping, light and shade, colour, and other æsthetic elements, which ought to be taught in a systematic manner as in the architectural schools in France and Germany. We quite agree, that it is desirable, from a due sense of the importance of architecture as a professional study, that architects should receive a higher education than they have been receiving. At the same time a general education will not entirely compensate for a neglect of special architectural subjects, such as a thorough knowledge of materials of construction in various directions, of details, of building appliances, of a proper knowledge of composition and proportion and colour, in all of which special and artistic subjects, we are being run very hard by our brethren both on the Continent and in America. The late Paris Exposition has opened the eyes of many to the fact that our English designs, though not wanting in vigorousness and expression, often show a lack of the sense of good composition and a due proportion and refinement of detail, especially of relief and decoration. These are questions that can only be learned by helpful and systematic instruction by men of reputed skill in their art.

GOODS AND FITTINGS.

THE modern practitioner is beset with innumerable hindrances and perplexities, not the least of these being the preliminaries through which he has to pass before he is prepared to begin his work. If well known in the profession, he is overwhelmed with solicitations and catalogues from manufacturers and trade firms: they pour in upon him at every post—that makes it necessary that this literature should be quickly digested or disposed of through means of the waste-paper basket. Quicker they come, quicker they go; there must be an outlet as well as an inlet for them; the consequence of which is that the few deserving ones are thrown out with the worthless, and are not even read. A strong reason, perhaps, that what the manufacturer or firm has to say should take a more permanent form in a professional journal. As it is, a great deal of information of much value to the architect and worth his digestion is thrown away as so much rubbish because of the enormous output and the demand it makes on him to read and consider it. Every new invention in the building world, from a red brick or tile to a patent latch, is the subject of a prospectus or is published as a catalogue, and we all know the costliness and artistic merit of many of the catalogues representing artistic wares, ironmongery, ventilating and other appliances. Many of them furnish in concise form the principles of the invention, or give examples of the application to, or employment on, buildings. What would be of

special use to the architect and surveyor in practice would be a summary or digest of the most approved things to be found in separate catalogues, in which reference could be made alphabetically, or in some classified order, to bricks and all kinds of clay wares, sanitary ware, plumbers' work, constructional iron-work, ironmongery, furniture, decoration, and other subjects, including their prices, which the architect is in quest of every time he writes a specification, or the quantity surveyor wants in preparing his quantities. Only as an aid to the memory such an illustrated index would be of service. To some extent Laxton's and Lockwood's builders' price-books supply the information. The immense increase of industries connected with building has made it extremely difficult for the architect to keep pace with literature of this kind, or to digest it properly; the younger men are bewildered with the rival claims of firms and products. Sometimes the young architect has to select a type, as that of a sanitary apparatus or fitting, or to make a choice between two or three different modes of carrying out the same object, as in those of, say, a fanlight opener. He finds it very difficult to decide when each invention claims to have many advantages over others in the market. To cut the knot he selects one which has the imprimatur of the name of a well-known firm, or one which has the largest number of testimonials to recommend it. But this may be misleading, as a patented improvement is often made or sold by a big firm because it has been forced into the market by a wealthy capitalist, or is more profitable to make. Unless a certain degree of technical knowledge is brought to bear upon the invention, there is little to guide. A material like terracotta varies greatly. An architect who does not know the nature of the clay, may easily make a mistake by specifying the manufacture from an illustrated catalogue off-hand. There is nothing more misleading than an illustration; without personal experience in the material, qualities, accurate shape, true lines, porosity, colour, and other matters cannot be ascertained. And for these and others reasons, museums of building materials and appliances or "exchanges," as they are called in America, are of value in enabling the architect to see and test for himself. In the selection not only of materials but of fittings, a great deal must be learned second hand by the inexperienced. Students and young practitioners would be employing their time to the best advantage by visiting buildings in progress and workshops, and by carefully examining the materials and fittings used, and in making inquiries;—so much in a building is now manufactured and contracted for that at one time would have been specially made for the work. Machinery and labour-saving processes have taken a good deal of the architect's work out of his control. Special joinery, office and shop fittings, metal-work, ironmongery, architectural pottery, even decoration of various kinds are now manufactured by firms who make these things specialties. The illustrated designs sent out by these firms are often very good. Many of them select leading artists for the work, and the architect is saved the trouble of preparing designs of his own. Take, for instance, chimney—pieces of wood or cast iron overmantels, such fittings as hinges, door-furniture, finger and lock-plates; or the designs for terracotta and decorative faience, and the profuse assortment of patterns sent out for walls, dadoes, and ceiling decoration. The architect has simply to make his choice, to specify the catalogue number or page and the price, and the contractor carries out the work, taking care to add his commission. But there is also a fatal facility in all this. It tempts the architect to be idle, to do less; it encourages him to look upon art as a

commercial transaction—to depend entirely on the firm;—and these are hindrances. There is the temptation to be led away by the tricks of trade. Representatives or travellers from several firms will wait upon the architect, will bring specimens of their goods, and will undertake to carry out the work at a reduced rate or on advantageous terms, and even go so far as to offer a commission on all orders received. The excellence of the manufacture or goods is a question that falls into the background; it is obscured by various misrepresentations on the part of the agent. Perhaps the architect gives way: his building suffers as a consequence of a want of firmness on his part. An inferior material is introduced, or the workmanship turns out to be defective.

Commercial importunities and trade circulars dog the steps of the young practitioner; but he is confronted with another difficulty at the commencement of his work. He may be made the victim of a designing firm or company who want to introduce their goods at any price. It may be worth trying, they think, to get hold of him. How can they sound him without wounding his dignity? It is easy to offer a trade discount of so much per cent. on goods supplied. A firm of tile-manufacturers some time ago circulated a pattern-sheet of their tiles among architects with the words written across it: "Fifteen per cent. commission allowed to the profession." In another case circulars were sent round to the architects by a firm of marble chimneypiece makers, offering a discount of 50 per cent. to the architect or builder only—an offer that could be understood if addressed only to those in the trade, but certainly suggestive of an illicit commission to the profession. But these offers are generally made verbally, or in an indirect manner, and we all know the "discount" dodge. It does not come from firms of repute. Trading firms have sometimes found it necessary, in sending their price-lists to architects, to acquaint them, as a matter of business only, with their trade discounts, but without any suggestion from them that such discount would be paid to the architect as a commission for introducing the business. But two interpretations can, of course, be put on such statements. With we fear, some of the profession, the bait is too tempting to be resisted in all cases. The evil compact is made, and the trading firm are the first to take advantage of the position they have won. The acceptance of any bribe makes it difficult, if not impossible, to complain of any defect of quality, or to demand any redress. The architect is practically in the grip of the tradesman, and is obliged to look with forbearance on any shortcoming. In several ways the architect may find it hard to enforce his claims. His design may not be followed; the tradesman is anxious to get one of his stock patterns introduced, and persuades the architect that he will like it just as well, he puts something very different in the place of a detail furnished by the architect, because he has it in stock, or it does not cost so much labour, or he persuades the architect to forego certain requirements, or to modify the scheme. "You leave the work in our hands, and we will give you every satisfaction," is one of the customary persuasions used. How often we hear of clandestine dealings between officials of corporations and private firms of contractors! In some cases we have heard of firms for the supply of coal or sanitary goods putting a small percentage on the goods, which is received in some form by the official for his recommendations. There are several ways by which a bribe can be offered and received; but it may be worth while to say that it is a recognised law that a secret commission received by an agent contrary to his duty can be recovered by the principal from the agent. A principal can also reclaim from the contractor the excess over the

market price which the latter receives, as damages.

In the choice of goods and the selection of fittings and decorative work, the younger man must necessarily depend on the recommendations of others, and on his own judgment and sense of the fitness of things. To a large extent in matters like sanitary fittings the experience of impartial persons must be taken. "Self-praise is no recommendation," so that we must take care that we steer clear of the mere puff. A kind of selective process is unconsciously at work in this matter. The architect's experience and judgment gradually make a choice. He specifies certain firms or their fittings on every occasion; the same names and types are introduced, and he seldom troubles to make any inquiry as to the claims of new inventions. Such conservatism of taste cannot, of course, always be right; new and better things may come into the market, and it is a duty he owes to himself and his client to make himself acquainted with them, so that he may determine whether any real improvement has been made. Attention, therefore, should be given to circulars and advertisements which appear, or the architect may find himself a little out-of-date. It must not be assumed that a fitting—say a sanitary fixture—is the best arrangement in every circumstance; that because it answers in one situation or on the ground or first floor, it will also be the same on the upper floor. Simpler arrangements are required in factories and workshops or dwellings for the labouring classes—simpler sanitary fittings, simpler door-fastenings and stoves. Those suitable for an ordinary dwelling are out of place in a workman's cottage, and this modification and adjustment ought to apply in other directions. What Mr. Brown or Mr. Smith may tolerate in the form of ironmongery will not probably suit the taste of the fastidious owner; or the lock-furniture and decoration suitable for a country residence may not be quite the thing in the reception-rooms of a house in Mayfair. Not only position in the same building, but locality, environment, and personal taste ought each to be consulted in the choice of fittings and decoration, though we are constrained to say that these factors are not always studied by the ordinary practitioner—that the same types and patterns are used everywhere, and always without any discrimination or discernment of adaptation.

ROYAL INSTITUTE OF PAINTERS IN WATER-COLOURS.

THE exhibition of water-colours in the Galleries in Piccadilly is rather disappointing. There are a large number of subjects hung of the usual landscape and genre classes that have interest for the ordinary picture admirers, careful in execution, but lacking in motive. Of those in the West Gallery we must notice a fresh little rendering of landscape, "Near Woking," by Claude Hayes, with its bloom of wild flowers, thistles, and furze, also Alfred Heaton Cooper's "Dawn, Coniston," a rosy-suffused hills and mist over lake; two clever subjects by Geo. Straton Ferrier, R.S.W., "Edinburgh Castle" and "St. Mary's Loch," a diploma picture, a strongly painted lake scene with bare hills in the background; also "Moorland Sunset" (24), views in Fifeshire (200, 243), all showing vigour and breadth of colour and handling. Less vigorous, but conscientious, is the work of Thos. Pyne. His "Cleeve Prior, on the Avon" (6), "From the Bungalows, Langham, Sussex" (194), and the views on the Avon exhibit that careful and finished landscape treatment that we are accustomed to see in the earlier masters of the school. John Hassall has given us a strong suggestion of character in his deep-toned, oil-like head, "A Cavalier." His large, amusing

work is in the East Gallery, "All the King's Horses and all the King's Men" (487), full of character in the faces of the crowd that are marching in procession through the gateway of a mediæval city, though we do not see Humpty Dumpty. It is certainly grotesque and humorous in its composition, and shows Mr. Hassall's power as a depicter of the serio-comic side of human nature. There is delicacy and feeling in D. Y. Cameron's drawing of "Venetian Doorway" (9). W. W. Collins's picture of "A Duel" (15) between two aborigines is a skilful piece of figure composition and drawing. The savage combatants are of the prehistoric type, half-clad in fur skins, and are armed with spears and primitive shields, and the scene is laid in a rocky fastness. Alfred Powell's "Moorland Valley" (17) is a fine piece of landscape, smooth and clear, only lacking vigour. Max Luddy, in his "Dusty Tim," a lad driving sheep along a dusty road, is a clever drawing. His "Milking Time" (62), "Gleaners" (115), and the atmosphere in "The Hayle River," and other Cornish studies, are all delicate renderings of nature. We notice Walter J. Fowler's "A Hillside," nice in colour (29); Frank W. W. Topham's scholarly subject "A Roman Triumph," a Roman Emperor with his little son in his triumphal chariot (36); A. W. Weedon's "Glen Logan, Ross-shire" (40), a river torrent through a rocky valley. Mr. Weedon sends several broad and vigorous landscapes, "After Rain, Hampshire" (54), "Hythe Common" (211), "Milford Pool, Hants" (251), and other works, all agreeable in colour and fresh, putting us in mind of the late Mr. Wimperis's work. George C. Haité sends an example or two of his crisp brilliant colouring and broad handling (44), and a fine view, "Granada" (47). Thurston Laidlaw Shoosmith has a simply grey-toned sketch of "Place Eau de Robie, Rouen," charming in its drawing, and we notice at the end of Gallery some effective drawings by James E. Hill, R. B. Nisbet (52), a black and white nocturnal harmony, and his "Loch Earn" (100); a study in Kirkcudbrightshire (61), by Alex. Macbride, whose subtle and technical handling of sunlight effect deserves notice. Of other works we may mention in commendation J. D. Ferguson's "In the Bay, Tangier," a piece of intense blue water, J. Shaw Crompton's "A Gentleman of the Road," a cleverly drawn coach incident—a highwayman, holding a pistol behind him, politely taking his hat off to a lady who has stepped out of her coach, while her footman is seen in the rear of the vehicle binding up a wound on his wrist; also John Falleylove's drawing of the Erechtheon (81). Leopold Rivers sends two of his serene and tranquil landscapes—"After Rain" (102), a wet road with village at dusk, and a charming road scene "Near Cromer" (278). Gordon Browne's "The Raiders" (105), and his humorous "The French in Holland" (145) and "Splicing the Pigtail" (289), in the next gallery, are clever and facetious studies. A pleasing piece of sentimentalism is "Just a Song at Twilight," a young girl singing at her piano. The blending of the lamp and evening light is well rendered. W. Lee Hankey has one of his charming harmonies in grey, "Standing with Reluctant Feet, Where Womanhood and Childhood Meet" (98)—a country lass, one hand resting on the side of a rustic footbridge, very plaintive in the expression of the face, and the handling is full of subtle grace and expression; and here, and in his larger subject picture in the central room (306), a country lad on a stile conversing with his sweetheart, we can realise the painter's power in the clear washes of grey colour put on with a full brush—both pictures full of poetry and harmony of tone. Stuart Richardson throws a spell over his "Whitby Harbour" (93). A clever sunlight effect in

meadow with horses is by A. Winter-Shaw. In the East Gallery, Mr. C. Clifford's "Little Lady Bountiful," a child walking along a path through a common—highly finished in execution; Henry Ryland's ideal Italian subject of an Italian girl resting on a marble bench, her lover behind (111)—a little too artificial—are to be noticed. Henry M. Rheam's "Pandora" (92) seems a little out of drawing in the long, strained arm reaching the magic casket. Kate Street's clever little study, a procession of children through thickets of blossom near the sea, "The Golden Age" (127), is pleasing in sentiment; and near it Arthur Severn has a powerfully-painted bridge scene with a swollen river torrent rushing through the arches, "A Spate in the Highlands" (132), very realistic. Harry Mine's view of Gloucester from the S.W. (120) is a delicate drawing of the central tower of the cathedral, gleaming in the sun.

In the Central Gallery, in addition to works we have mentioned, is a dexterous drawing of a steamship "Coaling" (144), by Charles Dixon, whose other views of the River Thames—"Greenwich" (233), "The Lower Pool" (246)—and his more important contribution, "The Fleet's Last Farewell to Queen Victoria" (407), in the East Gallery, exhibit a technical skill in marine subjects and naval ironclads.

The President, E. J. Gregory, sends only one subject (288) "The Brink of a Discovery," though what the discovery is we are at a loss to see. This is one of the upper reaches of the Thames on a delightful sunny day, with its sunlit foliage and a group of young ladies picnicking on the grassy banks, and two lovers in a punt. The work has all the finish and vivacity of the master. Frank W. W. Topham has a finished and somewhat laboured episode from Pepys' Diary during the Plague of London, 1665—a naked child being lifted up into the arms of a friend through an oriel window. Mortimer Menpes's figure "Mariamne" (Miss Maud Jeffries) (154), with long auburn hair, in dark robes, is gracefully drawn. His "Dorothy" (386), in pink dress, and "A Puritan" (427), a fair girl carrying a large Bible in a sort of meditative ecstasy, are also characteristic studies. The golden tone in J. Aumonier's "Corn Ricks," and his drawings "On the South Downs" and other works are pleasing landscapes in that sunny atmosphere he delights to paint. Arthur Buntington's "A La Fontaine" (165), a charming country maid at a well leaning against a wall, is delightfully painted, and admirable in colour and sentiment; and the same comment is applicable to No. 235. We pass on to Walter Langley's realistic Cornish scene, a fisherman and his wife looking at a picture on an easel outside a cottage-door, admirable in character, drawing, and technique. James Shaw Crompton has also an amusing incident, a soldier in red uniform standing near a table outside a country inn, the wonder of two yokels, refreshing themselves and the waitress. Yeend King's "View on the Stour" (175), a sunset effect, and his "Iford Bridge, Hants" (179), are in a healthier and less chalky tone than is usual with him. A picturesque view of Dinan, by F. Stuart Richardson (184); the delicate flowers in R. Meyerheim's cottage scene (192), and the characteristic Dutch studies by J. Finnemore 197, "In a Dutch Orchard," &c., may be named.

Sir James D. Linton has a Classical figure subject "Music," a half-draped maiden seated in marble alcove by sea with a Greek lyre. It is technically clever and refined. Another figure composition, "Enid," by Henry M. Rheam (218), a figure of a maiden clad in figured robe at the entrance to a grove or avenue, and holding a bowl of violets, is more of a decorative or symbolic treatment, but refined in drawing and colour. An evening misty effect, by A. Winter Shaw

(206), Miss Mary S. Hogart's "A Village Street" 208. H. R. Steer's old ornithologist, like one of Stacy Marks' interiors. Frank Dadd's "Horses for the King," two officers of the Georgian era inspecting horses for cavalry, drawn with skill and brilliant colour, are noticeable. A. Winter-Shaw's delightful subject, cows in a meadow, "The Day is Ending," is full of tenderness. The grouping of the animals, and the effect of dusk are very convincing. Passing many trivial productions, we come to G. G. Kilburne's brilliant interior of a ballroom—a rich Empire interior. A young, flattered lady in white satin is seated on the couch, rather awkwardly, as it appears by the folds of her dress, while two or three young dandies are attracted by her beauty. One is handing the maiden a cup of tea; another, with morose face, holds a bunch of flowers for her acceptance, while several flowers are strewn on the floor. The painter calls it "Moths." Frank Walton's work, chiefly views of "Sark," "The Epergnierie," "La Garde," and "Leeds-on-Wall" exhibit his usual *finesse* in coasts and rocks and blue seas; all display brilliance of colour. Tom Browne sends only two figure-subjects. His "Old Fisherman" in red coat is very clever as a portrayal of character. We also notice Miss Gertrude D. Hammond's delicate portrait of a lady 257. Harry Hine's "Bell Tower and Market Cross, Chichester" (266). John Fulleylove's large interior of St. Paul's Cathedral (272) is a clever and firm drawing, showing a rood screen not carried out. G. Davies paints a Welsh stream—a vigorous torrent dashing over rocks—in a masterly style, and we have in John R. Reid's "A Perilous Voyage" and "A Keen Little Fisherman" (286, 292) both delightful bits of coast scenery, with turquoise-like seas of intense green. H. R. Steer's head of a girl with rich auburn hair is strong, and Gordon Browne's "Splicing the Pig-tail" (298) humorous. Miss Nellie Sansom's "Difficulties," an old woman threading a needle by candle-light, is a sincere piece of work, and David Green's "Coming Ashore" (327), a boat coming through a surf, with a crowd on the beach, is fresh in colour. Another little piece full of subtle drawing and charm of colour is Edgar Bundy's "To Seagmoor" 327 and Francis Barraud's "His Master's Voice," a dog eagerly attentive to the sounds through a phonograph.

The East Gallery contains only a few pictures of interest. Claude A. Shepperson, a promising painter, paints a figure composition of much pathos, suggested from Tennyson's "The Promise of May." We have also the work of two veteran painters of landscape. James Orrock exhibits "Showery Weather" (345), "Stirling Castle" (477), and "Carting Peat on a Yorkshire Moor" (539); and Bernard Evans is still forcible in three subjects, one a view near Cannes (245) and his favourite theme, a view in Wharfedale, Bolton Abbey, in a storm (464) wonderful in drawing and depth of tone, though rather heavy in the trees. Hal Hurst's "A Fresh Fancy" is certainly the cleverest subject picture on the walls. It represents a snow-covered scene near a castle, a gaily-dressed lady with cloak over one shoulder and basket in arm, smilingly returning the effusive bow of a young gallant whose true young lady stands rather surprised partly out of sight at one end of a wall. The figures are drawn with vivacity and grace, and the colour is delicate in the handling. Dudley Hardy's large centre picture, "The Close of Day" (470), a few fishfolk loading baskets of fish on the beach, is remarkable in its freshness and grey tones, and the boldness and breadth of the handling. We must notice also Olive Baker's sunlit view of Whitby from the house-tops; Joseph A. Powell's "A Rising Moon," a very tenderly-painted landscape; R. B. Nisbet's soft and serene "Lonely Pool

at Eventide"; Adrian Jones, "A Breezy Day" (496), three horses harnessed to a rake; and the idealised figure-subjects, by Henry Ryland, "A Temple Ministrant" (461) and "Dione" (506). St. George Hare's very realistic face of an infant crying, his red face indicating temper, has been aptly named "The Old Adam" (520). Drawings by Miss Catherine Wells of Henry VII.'s Chapel, by Miss Bertha Lamenthal—quadrangle of Oriel College (511), Thomas Ireland's clever woodland study, "Monarchs of the Wood" (531), E. Wake Cook's fine interior "Cappella del Sacramento," St. Mark's, Venice (544), are worth notice for clever drawing and technical skill. Miss Marion Chase, who is known for her dainty little interiors in a very finished style, is certainly painfully minute and hard in "A Pleasant Duty" (543)—a lady arranging her flowers in vases. Charles R. Sainton has a study of luminous sky and sea (570). Many of the pictures in this gallery are disappointing.

A part of the West Gallery is set apart for the works of the Society of Miniaturists, and more three hundred miniatures, some of them of individual and personal interest and beauty and delicacy of execution, but our space does not allow us to mention any of these. The works of the president, Alfred Praga, Miss Lillie Stein, Miss Nellie Haddon, Mrs. DeBillemont Chardon show facile execution and delicacy of colour. We think the Council of the Institute of Painters could with advantage have reduced the number of works and thereby raised the standard of merit of the exhibition.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE ninth ordinary meeting for the present session of the Institute was held on Monday evening, the President, Mr. William Emerson, in the chair. Mr. ALEXANDER GRAHAM, Hon. Secretary, announced the decease of Mr. Newton Edward Jennings, Fellow, of Melbourne. Mr. Joseph Henry Brewerton, of Richmond Chambers, The Square, Bournemouth, and Glenreal, Boscombe, was unanimously elected as a Fellow.

THE ROYAL GOLD MEDAL.

The PRESIDENT mentioned that owing to the death of the Queen the award of the Royal Gold Medal had lapsed, and as her Majesty's decease occurred near the time at which nominations would in the customary course be made, and when it was impossible to approach the King on the subject, there could be no award for the present year. Members would be glad to hear, however, that the Council had received a letter from Sir Dighton Probyn, stating that the King would be pleased to be the patron of the Institute, and to offer, as was done by her late Majesty for over fifty years, an annual Royal Gold Medal to be presented on the nomination of the Institute to a distinguished architect or architectural writer of any nationality. Applause.

THE ART OF PICTORIAL MOSAIC.

A paper on this subject was read by Mr. C. HARRISON TOWNSEND, Fellow. It was illustrated by a collection of specimens of mosaic work, some coloured cartoons, and over eighty large photographs displayed on screens, and also by four-and-forty lantern-slides portraying examples at Rome, Ravenna, and Venice, the two final views thrown on the screen depicting work by the lecturer at the new Horniman Museum at Forest Hill now in course of erection, and the panel proposed to be placed on the front of the Passmore Edwards Art Gallery at White-chapel opened last week by Lord Rosebery. The author, in an interesting and exhaustive paper, traced the history of mosaics from the time of their first use in the service of Christianity in the 4th century. A fragment of mosaic found in the cemetery of St. Callisto, Rome, and now in the Vatican, is apparently of this 4th century, and is probably the earliest representation of the traditional features of Christ. This work, which shows the high level to which mosaic art had attained in the 4th century, may be regarded as

a compendium of the early or Roman manner, untinctured by the influence, later to be predominant, of the Greek canons and ideals. Constantine, after his removal of the seat of empire to Constantinople in 330 A.D., especially favoured the mosaic artist, and during his reign and that of his immediate successors a great number of churches in the eastern part of the empire were beautified by this art. In the 5th century the Empress Galla Placidia, widow of Constantine II., made Ravenna her seat, and it is to her that the city owes three of its treasures—the baptistery of the Orthodox, the chapel of the archbishop, and the mausoleum of the Empress herself. Describing and illustrating the mosaic work in these buildings, the author drew attention to the pagan symbols introduced in the Christian subjects represented, and remarked on the distinctly Roman treatment of the forms depicted. The series of mosaics on the Triumphal Arch of St. Maria Maggiore, also of the fifth century, are important among the early works of Byzantine art, and show the last effort for many centuries towards dramatic representation, before pictorial art became crystallised into conventional and traditional forms. The fifth-century mosaic work of the Basilica of St. Paolo fuori le Mura show how the earlier—the Roman—symbolism was passing away. The sixth century is rich in material for study, in both the Eastern and Western portions of the Empire. The gorgeous mosaics at St. Sophia, Constantinople, completed under Justinian in 559, lay concealed for many centuries under coats of whitewash. But in 1847 and 1848 an opportunity of studying the Byzantine mosaics occurred, and Salzenburg made his well-known series of drawings of the old work. There seems to have been a consistent scheme of decoration, a general tone of harmonious quiet colour, with silver largely used for the high lights, and soft green or blue folds in the drapery, and throughout a feeling of the antique or Roman style as it began to be influenced by the sterner, more rigid canons of the East. Touching the present condition of the mosaics of St. Sophia, the author stated that five years ago he examined, with the aid of strong glasses, the ceiling of the gallery, and came to the conclusion that the present whitewash serves as substitute for now absolutely vanished mosaics. The author then described in detail the 6th-century mosaics at Ravenna. Regarding the art at Rome at this period, the dominance of the Northern races, after the accession of Theodoric in 493, had led to the selection of subjects appealing to and models selected from the strenuous and vigorous Northerner rather than the dreamy and ascetic Eastern. The work is characterised by freshness of treatment, but with a kind of grim hardness in the type of countenance selected—the Roman ideal at base, but with an all but barbaric respect for physical strength. Seventh and 8th century examples were to be seen at St. Agnese fuori le Mura and St. Theodore, Rome. The achievements at Rome and Constantinople during the 9th century must be contemplated in the light of the great dispute of the preceding century as to the representation in religious subjects of the human or divine-in-human form, and the effect that the various church rulings had exercised on Christian pictorial art. The result was to check the art along the particular lines affected, but to lead to a reaction during the following century, and the ultimate production of many great and important works. From the second quarter of the 9th century till near the middle of the 12th the art underwent in Rome a period of absolute stagnation. During this period, however, notable work was done at St. Mark's, Venice—work in which a Greek or Byzantine influence is manifest. The existence of a purely Sicilian school in Sicily is doubtful; it would rather seem that the Normans, under Roger II., called to their service Greek artists. There is much similarity of sentiment between the St. Mark's and the Sicilian work. In the Western world the 12th century produced at Rome the apex of St. Maria in Trastevere, the character of the work still Roman rather than Greek or Byzantine; St. Francesca Romana, a very unusual and beautiful design; St. Clemente, Rome, the work exhibiting a treatment rather apart from the usual motifs of Roman work. The author discussed the mosaic decoration carried out in the 13th century in the Baptistery at Florence and in the cathedral at Pisa, and the further prosecution in the 13th and 14th centuries of the mosaic scheme for St. Mark's, Venice. The

Greek mosaists now became widely spread over the north of Italy, and did notable work at Florence, Pisa, Siena, and Orvieto. Rome saw some important works achieved in the 14th century. The really important work of the 15th century occurs in the chapel of the Mascoli in St. Mark's, Venice. These represent the principal legends of the Virgin, and in composition, colour, and execution are alike admirable. The state of design rapidly became worse and worse. The 17th and 18th centuries saw work accepted and praised, though it transgressed in its realism, its exaggerated movement, its rendering of accidentals, all the rules and canons that should regulate mosaic work. But it was reserved for the 19th century to strike the worse note of imitation, and not only to execute indifferent mosaics, but to falsify the history of the Church as recorded by and on its walls, by treating their mosaic designs as pseudo-thirteenth-century work. The author concluded with some observations on recent mosaic art in England. It cannot be said that some of the works are successes, save as to execution. The author expressed his conviction, however, that it would have been impossible to find in either France or Italy an artist who would have carried out work recently executed in England without falling still more egregiously into the errors which the great examples of the past showed to be present therein.

A short discussion followed, and a vote of thanks was accorded the lecturer on the motion of Mr. WALTER CRANE, R.I., seconded by Mr. J. ANNING BELL, and supported by Messrs. T. R. SINGER, JOHN D. CRANE, Lt.-Col. LUNN, PRINCEPAST, and the PRESIDENT. Mr. T. ANNING BELL briefly replied.

THE ARCHITECTURAL ASSOCIATION.

AN ordinary fortnightly meeting of the Architectural Association was held on Friday evening at 9, Conduit-street, W., the president, Mr. W. H. Seth-Smith, F.R.I.B.A., in the chair. Messrs. R. H. Murray and C. R. Pinsent were elected as members.

Mr. H. B. MERRILL read an exhaustive paper on the self-supporting lodging-houses for men built from the lecturer's design, and at the cost of Lord Rowton. The lecture was illustrated by plans and sections and numerous illustrations of the interiors of the five groups of buildings. The author dealt first with the house at Newington Park, and then with the other four. The central courtyard above ground floor has a width of 58ft. 6in. This is wider than those at either Calthorpe-street or Whitechapel, the latter being 48ft. 6in. wide, which gives ample width, but is not so convenient for planning the ground-floor rooms as a width of say 60ft. In all the plans, the point of a wide door is based upon an elongated letter U. This is the most satisfactory form for planning, and preferable to an inclosed quadrangle, although with the latter it may be possible to produce a large central staircase. The shape adopted gives an abundance of light sunlight and fresh air into the courtyards, and lends itself to the disposition of staircases at the extremity of each arm. The elevations are built in pressed Leicester bricks and mingled gaults, and the dressings in pinky buff terracotta. The whole of the interior walling is built with gault bricks, excepting where glazed brickwork is used. The brickwork throughout the building is of Portland cement. The floors are breeze with steel joists, the breeze covering the underside of joists 2½in., the top screeded over joists for flooring. The front roof is constructed of breeze slabs 4in. thick, with angle iron therein, and the slating nailed direct on to the slabs; all other roofs are flat, of breeze and steel construction, covered with asphalt. For administrative purposes the house is

as follows:—(1) Lodgers' dayrooms. (2) Lodgers' cubicles: (3) catering section, which includes sleeping accommodation for females employed in shop, kitchen, and scullery. (4) Bedmakers. (5) superintendent's apartments, with separate accommodation for the office clerk. I will assume that you are accompanying me upon a tour of inspection, following very much the course that a lodger would take. On entering the building, an office is provided in the vestibule. Here the lodger makes application for a bed ticket, for which he is charged sixpence; this

freed him to the use of all the dayrooms of the house and separate sleeping accommodation for one night. The office front and fittings in same are in polished teak. Opposite the office window turnstiles are fixed; they serve as a "moral barrier," it being impossible to use them for checking purposes. The space beyond the vestibule is a provision not only to give room where there is much traffic, but, in addition, to give sitting accommodation in what is a favourite place with the lodgers to watch the arrivals. These spaces and the corridors leading from them past all the dayrooms to the two cubicle and basement staircases have glazed brick walls from floor to ceiling, with a dado in chocolate and cream coloured bricks and ivory above. The floor is cement and granite chippings. The dining-room has a floor-space of 5,300ft., and seating accommodation is provided for 440 men at tables. The walls have a glazed brick dado in chocolate and cream, 4ft. 9in. high, with plastering above distempered to tint. The floor is of oak blocks laid herringbone. The tables and seats are teak, carried on cast-iron standards, the length being 7ft., giving a provision for eight at each table. Four large cooking ranges, with ovens, hot plates, and grills are provided. These are placed out of the line of traffic, and are built into glazed brick chimney breasts from floor to ceiling. The portion of dining-room between the front and back wings is, in addition to windows, top-lighted and ventilated by four lantern lights, the whole of sidelights in which open for ventilation; in addition, all the windows are hinge-hung to fall in above transoms, and casement-hung below; ventilation flues are also provided in walls. Between the two large sections of the dining-room a lodgers' scullery is provided, with walls built in glazed brickwork from floor to ceiling, fitted up with glazed fireclay sinks and teak draining-boards. The crockery and service room between the dining and smoking-rooms is built in glazed brickwork from floor to ceiling, and fitted up with shelving. This is provided for those who cook their own food, and is furnished with pots, frying-pans, teapots, plates, cups and saucers, which are at the lodgers' service. The shop has a teak front with sliding sashes, and is fitted up with counters in teak, hot plates, urns, and drawers and shelving. The lift delivers into a service lobby outside kitchen and also into the scullery on basement, and the staircase gives access to same. The smoking-room is approached from corridor and from dining-room. The floor space is 1,100ft., the seating at tables is for 112 men, with an additional seating accommodation in wooden easy-chairs. The chimney-pieces are in glazed faience, and large open fires are maintained. At the back of building is the reading-room. There is an L-shaped room with an area of 2,550ft.; the walls have glazed brick dado with plastering above as in dining-room, the chimney-pieces in glazed faience. Seats at tables provide for about 170 men, and a large number of easy-chairs are placed around the fireplaces. In all these rooms the doors are set into a recessed lobby; this allows them to open outwards without projecting into the corridor, and, in addition, it is possible for the superintendent to obtain a view of the room while standing in this lobby to see that order is maintained. Adjoining the dining-room are locker corridors. In the house under notice they are 1ft. 6in. cube, with a shelf dividing into two parts. Of these lockers there is a provision of 800; they are arranged in tiers four in height, and each locker is ventilated and numbered, and has a separate key. Above these lockers a number of larger lockers of double the cubic capacity are provided for those who require additional space. In the locker corridors small tables are placed against the piers for brushing or sorting articles in lockers. The corridors are lighted and ventilated at ends by windows, in addition to top-lighting and ventilation. The waterclosets and urinals for day use are placed at the rear of building, and are disconnected from it by a ventilated lobby. The walls, partition walls, and divisions to urinals are all ivory-glazed brickwork. The roof over is in lantern form, glazed from end to end, in T-iron bars, with vertical pivoted louvres. There are forty-one waterclosets, being a provision of one for every twenty men. The division and front walls are 6ft. 3in. high with a moulded capping and open above. Each watercloset is fitted with a flushing cistern, having an iron supply pipe; when lead piping has been used, it has disappeared before long. The pan and trap used are of the short hopper type, or glazed brick.

"Siphon" is used for risers, and the whole of the space inside same, around pan and trap, up to the top of pan, is filled in solid with cement concrete. This is found to be a perfectly effective means of avoiding breakages. The seats are teak, bedded and screwed down on to the concrete. The doors are kept up 3in. above floor for ventilation. The door-stops and the hinges are slightly out of the perpendicular, the effect of which arrangement is that, excepting when the door is bolted, it automatically opens back on to the division wall. The door frames are doweled down to 3in. cement base-blocks. The floor of waterclosets is laid with a fall towards door, and constructed in concrete with granite chippings. The urinals are white glazed fireclay backs, finished on the front edge with 9in. double bull-nose divisional piers, which are carried to a height of 5ft. The top of urinal backs is covered down with slate overlapping copper sparge-pipe with automatic flushing. At the extreme end of back corridor a staircase is constructed, giving access to the roof over the portion of ground-floor rooms within the centre courtyard; this roof is at first-floor level, and is paved with asphalt, fenced in, and provided with seats as an open-air lounge and smoking-space.

USEFULNESS.

The two main staircases are continued down at the end of ground-floor corridors to the basement; a corridor leads from each into the lavatory. The whole of the basement, where used by the lodgers, is built in white glazed brickwork from floor to ceiling, and all the floors are cement concrete finished in cement and granite chippings. The lavatory has a dado in French grey and ivory, with ivory above. There are eighty basins, fitted with hot and cold water supply. Each set of ten is carried on three divisional walls, with angle-iron bearers to carry slate top; the basins are white enamelled fireclay, with outer rim bearing on iron bar on edge bearers, shaped to basin and bolted to outer angle irons. Immediately under the slate top two horizontal water-pipes, hot and cold, are carried from rising mains, on main walls, through to end division, with a plug for clearing in the event of a stoppage; branches rise vertically to gunmetal screw-down cocks. Iron waste-pipes are used, discharging over channels in floor; for basins, loose turned-wood plugs are employed. We began with brass plugs and chains—they speedily went; but the worthless wooden plugs we never lose. The floor is laid with falls to the channels under these lavatories. Towel-rails are fitted at ends of ranges and on walls, with round towels supplied thereto. Central over each range of basins, and running longitudinally, a hat and coat rail is fixed. A portion of lavatory is screened off by a glazed screen, and fitted up with white glazed fireclay feet-washing baths, with teak draining-boards between each. Hot and cold water is carried to each, and the wastes discharge over a channel similar to the lavatories. In the front corridor leading from lavatory to the foot of main staircase there are bath and dressing-rooms; the walls are divisional walls, 6ft. 6in. high, in glazed work, and the baths are white glazed fireclay, with a riser of glazed brickwork, and finished with a teak top. Baths uncased were tried in the first house, but the space around them, next to the walls, too often proved a receptacle for discarded underwear. The dressing-rooms are to all intents and purposes as bathrooms, minus the bath. In the corridor connecting front and back staircase you will find the lodgers' washhouse. White glazed fireclay washing-troughs are fixed on walls, with hot and cold water supply and draining-boards. A wringer is part of the equipment, with tables for the folding or sorting of garments. A Gill stove, surrounded by a galvanised-iron framework clothes-horse, is used for drying. In the same corridor, adjoining the lodgers' washhouse, is the porter's dayroom, fitted with lockers, tables, and easy-chairs. On the opposite side of corridor two rooms are allotted to a repairing shoemaker and a tailor, who find constant employment from the lodgers. Returning to the main back corridor, a space between porter's room and lavatory is used as a boot-cleaning and clothes-brushing space, tables and foot-rests being placed therein. Opposite this space is another partly in use, the unused portion being a provision for extra locker accommodation, that in use being a parcel-room. The knife-cleaning room and the fitter's room adjoin, the latter being fitted with vice, &c., for minor repairs. In

racks for storage; in the passage portion of the store a bench extends in front of windows for the purpose of sorting linen, &c.; this is then despatched by lift in corridor to the upper floors. Kitchen coals, meter-room, and water-closet for catering staff are provided. The catering staff sleep on the premises, under the reading-room, and have a sitting-room and five bedrooms; the walls of these are plastered, papered, and furnished with pictures, and the floors are wood block. A private door at basement level enables the superintendent's wife to obtain access for supervision.

The bedmakers are not resident upon the premises. They enter the building by the door at side of office, and descend to their room in basement by a staircase in full view of the office; the staircase is carried up, as previously mentioned, to the first floor of cubicles. A room, known as the bedmakers' room, is provided at the foot of stairs, fitted with a small range for preparation of their meals, table and chairs. Adjoining the room is a cloakroom, fitted with sink, and a water-closet opening out of same; a door gives access to the soiled linen-room, which is built in glazed brickwork from floor to ceiling, and has a cement floor. Having given you a somewhat detailed description of an ideal site, I now propose to describe in a general manner the three other houses, taking them in their order of erection. You will thus the better judge where experience has dictated alterations of the general scheme.

This is erected upon a site which presented a good many problems in planning. It has quite a fair share of troublesome angles, added to which the paving around had a rise of 8ft. from the entrance to the staircase end of the frontage in Calthorpe-street. In consequence, the basement floor is at a level varying from 8ft. to 16ft. below paving. Despite this, the setting-back of frontage in Calthorpe 8ft., and the facing of the heavy retaining wall with white glazed bricks, coupled with the use of ivory glazed work in the basement, has secured good lighting. There is a frontage of 200ft. to Calthorpe-street and 125ft. to King's Cross-road, with a superficial area of 17,180ft. A portion of the foundation work was troublesome, although interesting, as on the west side (the lefthand boundary) the old Fleet ditch followed the line of boundary. Generally the construction and materials throughout are as at Newington. The arrangement of superintendent's residence, office, and entrance are planned in the same relationship, and also the same provision of bedmakers' staircase for access to cubicles and their room in basement. There is also the same complete isolation of lodgers' portion of building from all other parts. The house has cubicles for 677 lodgers. The smoking-room has seating accommodation at tables for 128 men; the floor area is 1,600ft. The dining-room has seating accommodation at tables for 376 men, the floor area is 4,000ft. The reading-room has seating accommodation for 112 men at tables; the floor area is 1,528ft.

The lavatory has eighty basins; this is rather excessive, and in the other houses that number is found to be sufficient for 800 men—a basis of one basin for ten men is ample. The baths, feet-washing and lodgers' washhouse are on lines similar to Newington. Water-closets are provided for day use in proportion of one in twenty. The catering section and accommodation is proportionate to Newington. The vaults on site existed, and are used for coals, crockery, and meter-room.

In general planning, sizes, and construction these are as Newington, with the exception that the staircases are not quite so ample, and but one water-closet for night use is placed on each of the various floors. Railed communication across the roofs is provided.

The building is erected upon a site within 200 yards of Hammersmith Broadway. The site consists of two parallelograms, the smaller of which forms the frontage to Hammersmith-road, the frontage to which is 65ft. by a depth of 102ft. to its junction with the larger, which has a width of 160ft. by a greatest depth of 276ft.; the total superficial area is 11,000ft. The space was

sufficient to permit the erection of a building upon the back portion, reserving large areas for light and air, while utilising a portion of the frontage for business premises. It proved possible to place the whole of the accommodation other than cubicles upon one level, sinking a small basement for furnaces, bedmakers' room, and parcels-room only. Materials and construction, excepting in a few minor details, as at Newington. The superintendent's residence is here a three-story building above pavement, the lower story being used for office, and is situated in relation to entrance and access from same as in other houses. The ground-floor main corridor has been made 2ft. wider than at Newington. The smoking-room has seating accommodation for 164 men at tables. The floor area is 2,428ft., it is top-lighted, in addition to large bay window; the fireplace in bay is covered down at sill level, and the window runs over it. The dining-room has seating accommodation for 464 men at tables; the floor area is 5,722ft. The reading-room has seating accommodation for 176 men, and a floor area of 3,128ft. Lavatories, water-closets, baths, and feet washing are proportioned as at Newington. The lockers here are all 3ft. 1in. high by 1ft. 6in. square, with shelf and space for umbrella. They are placed three in height, and may be taken as a new standard of size.

CUBICLES.

In consequence of the length of site it was found possible to throw out an arm from the usual U shape towards the north with sufficient lighting, east and west, for the cubicles. This gave such increased accommodation on each floor that the building was built to a height one story lower than Newington or King's Cross, and still provides accommodation for 800 men. The lengthening to the north made a third staircase necessary.

Whitechapel.

This, the latest of the Rowton Houses, is in course of erection in Fieldgate-street, which runs parallel with Whitechapel-road, and is immediately behind the St. Mary, Whitechapel, station. It has a frontage to Fieldgate-street of 192ft., and a back frontage of 259ft., by a depth from front to back of 128ft., giving a total area of 29,589ft. While this gives an area somewhat in excess of the Newington site, the departure from the rectangular form, and the decrease in depth, gave some little difficulty in planning the dayrooms and catering and other portions of the buildings. For cubicle planning the site is good, and permits of the omission of one story as compared with Newington, yet giving an accommodation of over 800 beds. To plan the dayrooms on a ground floor with a basement under would have provided excessive space in basement, and also increased the height above paving of building by a height of about 6ft. I have therefore planned the entrance on paving level, and placed all the usual ground floor accommodation down on a sub-ground floor, the ceiling of which is 6ft. 6in. above paving. The only room displaced by this arrangement is the reading room, which will be approached from entrance hall by a staircase rising 7ft. only. The entrance planning is as in other houses, with differences—the clerk has his bedroom, approached from the office by a staircase over the entrance; the superintendent's residence is two stories in height, and underneath his lower story a third story is obtained by lowering the floor (in the height of two stories of main building), thus forming a basement containing bedmakers' room and porters' room, approached by separate staircases; the bedmakers' by the wooden (teak) staircase at end of entrance, and the porters' by a staircase from lower ground-floor level under staircase to reading-room; parcel-room adjoins porters' room. The dining-room is chiefly top-lighted, and seats 464 men at tables; the floor area is 5,832ft. The smoking-room accommodates at tables 112 men, and has an area of 1,960ft. The lockers are of the size mentioned for the Hammersmith House, and provision is made for one for each lodger. Lavatory, bath, feet-washing, and water-closets are practically the same. The staircase up to reading-room gives access to the roofs over the rooms in central courtyards; these will be railed in as a smoking-lounge. The reading-room seats at tables 144 men, in addition to easy-chairs, &c., and has an area of 2,430ft. On the same floor cubicles are planned, the central corridor leading to a staircase at each end. The upper floors of cubicles are served by three staircases. In conclusion, stress may be laid on the

point that a site must be adequate to house at least 400 men in order to pay its way.

A discussion followed, in which the PRESIDENT, Messrs. THOMAS BLASHILL, A. T. BOLTON, and C. H. BRODIE took part, and a hearty vote of thanks was awarded to the lecturer.

"BUILDING NEWS" DESIGNING CLUB.

A PAROCHIAL CLUB FOR WORKING MEN.

WE can hardly express our satisfaction with any of these designs judged as a whole, though several of those submitted display ingenuity, and no little skill. The majority fail to quite realise the treatment suited for a village building, and we cannot say that "Obit," whose scheme is placed first, has produced a very satisfactory elevation, and certainly it does not express the idea embodied in its plan. The air of simplicity and odd quaintness which the façade displays constitute no small merit; but the composition has a sort of chance crudity about it, indicating a lack of thought. The plan is well adapted to the site, with shapely rooms skilfully contrived. The entrance-hall evidently is none too light, for the windows over the rear side of the bar, extending as they do the whole width are none too ample. The space in front of the bar is better than in the majority of the plans, and the retiring-room with its own lavatory is less cramped than in "Dan's" plan placed second. "Obit" does not depend upon light from the adjacent land, and he has no small areas, which admit very little light when carried up more than one floor high. He has not provided a stage-door from the side street, which some have ingeniously made a feature of, and for which we have given credit in judging the respective merits of the designs. "Obit's" card-room and smoking-room are a justification for the staircase leading to same, and in themselves are rather good. In "Dan's" design the staircase would come in an ugly way above the entrance inner vestibule—a difficulty overlooked by him. The reading-room in "Obit's" design is a more ample one than in the plan placed second, but it has to do duty for the magazine-room as well, and less space is lost in passageways. A private approach to the bar, too, which "Obit" gives, is an advantage. The central bedroom in his attic floor gets its window in a questionable fashion over the gutter between the two main roofs, and at the far end of the room. The head-room in the so-called "lumber" space in the roof over the living-room would be rather limited. We have thus taken a somewhat comparative view of the two plans put first and second for the reason that they run each other very closely in some respects. "Dan" gives an exit door by which means the big room could be used irrespective of the club, which would be an occasional convenience. His elevations are clever. The view does not enhance their good effect. "Obit" avoids representing the flank wall of his hall by taking the sketch from the other side of the club, and so shirks a difficulty which would be patent enough in execution. The first, second, and third designs are all illustrated herewith. Here is a copy of the instructions issued for competitors:—

"A parochial club for working men, to be erected on a south-west right-angled corner site in a village street, having a main frontage of 80ft., with a depth of 45ft. at its east end, and 65ft. on the return frontage at west end. The accommodation to include a hall for meetings 50ft. long by 25ft. wide, and of proportionate height; and in this room there is to be a platform or stage arrangement adaptable for smoking concerts, &c., with a retiring-room. The club-rooms to consist of a reading-room for newspapers, 25ft. by 18ft., or of that area. A reading-room for books and magazines, 18ft. square, or thereabouts, this room being used for smoking. A billiard-room for two full-sized tables, and a card or writing-room, 12ft. by 14ft. Provide a lavatory with three w.c.'s, and stand of four urinals, for use of the club. The entrance-hall should be central, and a small bar counter on one side of it, about 12ft. long. The steward's room to be on the first floor, and consisting of kitchen, pantry, living-room, and three bedrooms, one being for a maid-servant. Offices to match. Yard to be formed on asphalt, flat if necessary, over some of the club-rooms. A mezzanine arrangement might be adopted for one or more of the smaller rooms if desired. The entrance to the club to be on the main front. Scale, 8ft. to inch. Two plans, two

elevations, section, and view. Materials optional. Size of paper, 25in. by 18in. Style, Renaissance."

The third design, by "Thrams," presents a family likeness to "Dan's" proposal, but is not so good. The windows, cramped against the party line to the rear of the site, make a fatal objection. The pretentious kind of dog-legged staircase leading to the card-room would allow not too much headway at the main entrance. The plan would be dark in its centre, and the newspaper-room would not be light enough at the far end. The perspective does not do the design justice. "Gow Chrom" has some individuality in his façades, but is very similar in the general arrangement of his plan to both "Thrams" and "Dan." The get-up, too, bears a family likeness. If the competitors are friends, we would advise them to work separately, and thus give a personal character to their own work. The same objection noted before as to windows located along the party-fence line at the back is seen here. A fatal fault on the first floor is that the living and bedrooms can only be reached through the kitchen. In some respects "Pat McKann," more than anyone else, has hit off a country-side type of building in its general gabled contour; but his plan is cramped and faulty, with w.c.'s right in the middle of the house. Externally, the semicircular windows flanking the entrance are not in keeping with the rest. The billiard room would be very dark, and so would the entrance hall. "Quercus" makes much of his perspective, and by giving a separate entrance for the assembly-hall renders the exterior too much like two buildings. The reading-room and magazine-room are both upstairs. The bar is too small, and the w.c.'s too much in evidence between the two entrance-porches in front. Architecturally, his detail is somewhat lumpy. The front is relieved by Dutch-like shaped gables. "Robin Hood" is too pretentious in his style with mullioned windows and dome-capped tower. His plan is overweighted with passage-ways and a dark entrance-hall. The billiard-room is lighted from one side only. The back rooms have windows right on the party-wall line. This is not so objectionable as in the previous cases named, where they are located just within the boundary-wall line, for the boundary-wall would in that case block the windows up. "Robin Hood" draws carefully, but he plans poorly. Thus there is no chance of reaching the stage in the hall, excepting by passing through the room itself. The side columns seriously curtail the seating space of the hall. "Sundial" sends a suitable exterior, brightly delineated in pen and ink. The plan is lacking in study giving contrivances which seem to have resulted too much from chance. The author ought really to do better. "Brush" is a painstaking, though the clouds in his perspective look as if a water-spout was in progress. The figures in the view are too big. The plan is workable, though the adjacent buildings would block up his lavatory windows at rear of the stage, to which no access is provided save through the hall itself. The bar is too small, too isolated, and too close to the front door. The w.c.'s are badly placed. The elevations are crisply drawn, but we do not admire the style of design adopted, looking too much like a school. "Cambria" uses semicircular arches for his ground-floor windows, and runs them in in the flank wall as an arcaded treatment. The plan is one of the best submitted, though the segmental bar obtrudes itself unduly into the hall. Upstairs there is an ugly long passage. The exterior is so indifferent that we cannot place "Cambria" higher. "1901" comes next with a school-like design, partly worked out in half-timber. There is a dome light over the central entrance hall, and the steward's house is reached by an iron circular staircase, both of which ill accord with the old-fashioned air aimed at outside. The hall has a rounded end at the stage. The billiard-room is too long and too narrow. "Smugimugh" has a poor idea of architectural fitness, piling up his elevations incongruously, without much sense of good lines. His plan, puzzlelike, fits in, excepting where it projects over the boundary-limit, with its odd angularities. "Maori" is original, and puts the billiard-room over the hall in the roof. He radiates the building with the contour of the ground, a fourth of which he throws into the street. In some ways the plan is very commendable, and the effect is picturesque; but the drawings are excessively poor, and the stage arrangement is absurd, with the doorway to the retiring-room a good way down the hall. "Perseverando" makes a good

plan, and carefully works it out in detail in rather commonplace way, not attempting to mask the awkward shape of the land in his billiard-room. The main entrance can only be approached through the newspaper-room. The exterior is too elaborate in idea, and the perspective is out of drawing. "Pierrot" seems to believe in dormers for doing the cross-line on the fronts, which have ten stackpipes. His assembly-hall is on the first floor. The plan is very well worked out, even if we cannot approve of the exterior, which is very badly shown in a workmanlike way. "Dave" is also a careful man. His bill stage has two retiring-rooms, but so arranged that it would be impossible to communicate with anyone in the second room without traversing the stage, and neither can be got at from the club without passing through the hall, or else by going out into the street. The other designs come in this order. "Tom Thum" sends a Baptist-chapel-looking hall. Simplicity is its recommendation; but the hall is quite distinct from the club. It would be a cold, unhappy room. "Scottie" is too curious with his lopsided assembly room. "Willie" has three doors in one front, and one in the return. The building might be taken for a cottage hospital. "Ivanhoe," with very massive doors and thin partitions, Scotch in idea, but poor in plan. "Blom" is a Classical mode, indifferently realised. "Primus" precise, but primitive in idea; "Solnaes" similar; "Pencil Point," "The Kid," "Mate," unsuitable; "Quiz" queer, but some good points in plan; "Taffy" trifling; "Embryo" elementary in notion; "Ecotier" all in the nooks and notchings; "Rathra" rather after the cabinet-maker's type; "Gargoyle," "Perseverance," "Iolanthe," "Brutus," "Mullion," "Hare," "Sisyphus." The last named is most carefully drawn, but anything more unsuitable we cannot conceive for an English country town.

HOW TO ESTIMATE IN THE ANALYSIS OF BUILDERS' PRICES.—I.

By J. C. F. F.S.S., Surveyor, War Dept.

ESTIMATING is undoubtedly the most important part of the builder's business. Many who tender make up their prices in a somewhat haphazard manner, often from published price-books, aided by their own judgment and experience, and without a full knowledge of the scientific methods which underlie the formulating of a true estimate.

The analysis of prices has not yet need much beyond where such men as Gauthey, Anselin, Nadand, and Blottas left the matter many years ago. It is not proposed to make this a mere series of articles on builders' prices; but it is intended to serve as an introduction to the principles upon which estimating is based rather than to set forth standard rates, which vary according to circumstances in every locality.

For the sake of uniformity, however, the author has endeavoured to approach London values. Provincial prices are generally from 5 to 15 per cent. less. In competitive tendering lower figures are, of course, often adopted.

The prices of most building materials have gone up from 20 to 30 per cent. within the last few years, chiefly by rings and corners, thereby creating artificial values. This constant fluctuation must be borne in mind in reading these articles.

Before a builder can tender properly, he must take many things into consideration, for if he is not careful a faulty estimate may mean a heavy loss and the decrease of his reputation. Low estimates, indeed, are often caused by an improper conception of what is required, and a loose consideration of the values of different features. The bills of quantities and every point in the plans and specification should be thoroughly examined, as well as the amount and class of work, and materials to be supplied. Quotations for special parts should be obtained direct from the merchants. The various markets ought also to be closely watched, so that the contractor may be quite up-to-date as regards the values of timber, metals, and other materials.

If the work is in a distant neighbourhood, a visit should first be paid to the place, and full information obtained as to the formation of the soil, the cost of cartage, railway rates, lime, sand, gravel, bricks, wages, &c.

To be successful, a builder must strictly attend to his book-keeping, so that he can ascertain the profit and loss on various jobs, and such volumes

as Material, Journal, Abstract, Wages, Ledger, and Balance books should be kept. Estimates ought always to be retained and put away, whether a job is secured or not, for they will be valuable for future reference; and a builder should note each article sent to the ground or returned, and enter the cost opposite the item. A correct account of all labour, and how spent, should likewise be kept; and most contractors, when they have ascertained by this means precisely how much certain work costs them, and the relation between estimated and actual cost, being the loss or gain on each item, should make a record of it in their prime-cost or other ledgers.

The variation in tenders for the same job is quite remarkable, and this is particularly the case when builders take out their own quantities. The chief explanation certainly lies in the fact that no proper system of estimating has been adopted, but that the clerk has relied upon a price-book, and has concocted prices which are only empirical. The object of these articles is to show how to avoid such random methods of work.

BUILDERS' PRICE-BOOKS.

The published price-books are naturally the first resort of the inexperienced estimator; but, as a matter of fact, the trade does not rely upon them for serious pricing. They are no doubt compendiums of handy information connected with building, but the prices given are not always compiled in a scientific way. For example, some of the prices include trade discount, some do not; while others are merely list prices from merchants' catalogues. The discount in itself largely varies, and there are two discounts: a trade discount and a discount for cash. Moreover, the percentage of profit does not appear to be uniform, and the proportions of material and labour are not shown. The diversities are innumerable, so that modifications to suit special cases are impossible.

A builder's price is broadly made up of two things: material and labour, to which may be added a third: profit. The cost of material and the cost of labour vary from time to time and from place to place, and do not fluctuate similarly. Some prices being for material only and some for labour only, and the rest for both in varying proportions, a rise in wages must affect them very differently. The manual labour is often the most expensive item in a price, as it includes the preparation of the material and fixing.

From this it is obvious that a price-book to be capable of adaptation must necessarily set out separately in each case the time occupied and the material consumed, or, which is the same thing, their values at stated rates. It is, therefore, out of the question to set up a standard of prices suitable for every edifice, as there are so many points affecting the value of the work which must be taken into consideration, and the circumstances attending the erection of different buildings are rarely alike. Such things as closeness or slackness of supervision, misunderstandings as to quality of workmanship, worrying by the architect, delay in furnishing detail drawings, differences in locality and site, frost and bad weather, sudden rises and falls in the markets, &c., will all help to alter the conditions of profit or loss for the contractor, and the extent of which no price-book can measure.

When, however, the builder has worked out a series of prices for himself, he must be on the alert for parallel cases to avoid the great labour involved in making calculations afresh every time a new estimate is made. In fact he should carefully prepare an adaptable price-book of his own, and revise it from time to time. Thus a consistency in pricing would result, which is of some consequence.

PRIME COST.

The P.C., or net-cost, means the prime or net-cost after deducting from the merchants' list-price in his catalogue the trade discount. But it does not include the discount for cash, which is only given when the buyer pays cash down, nor the builder's profit. The definition of this expression becomes important when dealing with provisional amounts in bills of quantities, as different interpretations are put upon it, such as that the letters P.C. are intended to imply the published catalogue price. This, however, is the "list price."

TRADE DISCOUNTS.

As already stated, there are two discounts: a trade discount, and a discount for cash.

The former is given by firms supplying build-

ing requisites to those in the trade, and the amount varies from 10 to 50 per cent., and even the discount allowed by one merchant differs according to those with whom he deals.

The discount for cash is usually 2½ per cent., and is generally conceded by all wholesale firms.

PROFIT.

A profit of 10 per cent. is the least that builders like to accept, exclusive of establishment charges. It is almost invariably added to each individual price, although in the case of pricing a bill of quantities some would prefer it inserted as a lump sum at the end of the bill.

For work or material in small quantities, the profit should be higher, as the total expenditure in such a case is more in proportion. Therefore add 15 per cent. for small jobs, up to, say, £5,000; above this, 10 per cent. should pay.

The large contractor, who perhaps owns a brickyard or a quarry, in addition to extensive premises full of rapid-working machinery and labour-saving appliances, can naturally turn out work more cheaply and expeditiously, and at a bigger profit to himself, than the small tradesman or jerry-builder. The latter, indeed, scamps, because that is his only means for keeping himself afloat, and he cannot rival his more successful competitor. Dozens of similar doors and windows, and hundreds of feet run of moulded work in stone or wood, can be rattled out by machinery at comparatively little cost, and these, of course, are produced at a fraction of the rate of similar articles laboriously effected by hand labour. But in any case, experience and judgment are required before a definite profit can be settled upon in making out an estimate, and the proportion is not always uniform, some items yielding a large profit and others very little.

With reference to the terms of payment, it is considered that the larger and the more frequent the payments on account of contract, the greater will be the facility with which the contractor can execute his work, and the lower will be the terms at which he can offer to perform it. The reserve to be deducted from each payment should never exceed 25 per cent. on the value of the work executed.

ESTABLISHMENT CHARGES.

These consist of salaries, depreciation of plant and machinery, rent of premises, gas, water, interest on capital, &c., which must be taken into consideration in the output on a new building. Establishment charges and profit should be kept separate, and both allowed for when estimating, careful office accounts being kept of each. Such charges are commonly reckoned at 5 per cent., and even as much as 7½ per cent.; or, say, 5 per cent. interest on capital, and 2½ per cent. for depreciation. "Occasionally they are classed in two categories: 5 per cent. on work done at the building, and 7½ per cent. on work done at the builder's shops" (Leaning).

CANAL AND RAILWAY RATES.

Canals.—Transport by canal is cheaper than by railway, and the three principal causes are:—First, on a canal there is no item of cost corresponding with the wear and tear of rails, sleepers, or fittings, though the cost of maintaining banks and locks must be taken into account. Second, there is a corresponding saving of the repairs required by rolling stock and locomotives in consequence of their running on a rigid permanent way. Third, the most important reason is that the maintenance of works on a canal is much less costly on an average than the corresponding outlay on a railway, not only from the absence of vibration, but also from the smaller magnitude of the works themselves. It is to be regretted, however, that these waterways have fallen into neglect and gradual decadence, and canal traffic seems to have declined in proportion to the development of railways. Perhaps this may be attributed to the slowness of transit and general inability to receive large barges, yet good canal systems, like those on the Continent, are of undoubted benefit if properly managed.

A complete map of all the canals and inland navigations is embodied in the report of the Select Committee on Canals, May, 1883, Vol. 13, Parliamentary papers. Among some of these may be mentioned the Midland Canal, the Grand Junction Canal, the Regent's Canal, the Grand Surrey Canal, all of which are connected with London. The dues vary with the canal and the distance carried, as well as differing with the material. A common rate for the discharge of cargo at a London canal wharf is 10s. per day.

RAILWAYS.

A knowledge of railway rates is necessary for the contractor, for these must be generally added to the cost of the goods as quoted by the merchant. Materials, too, are often worked at the builder's shops in town, and have to be sent by rail to the site. Here again the charges differ with the goods and the company; but the cost of conveyance is much less in proportion for long distances than for short ones. Articles go more readily by goods trains, which are slower, than by ordinary passenger trains, and there are two rates, one called company's risk, under which the company is liable for damage, and a lower rate, called owner's risk, under which the company is not so liable.

The carriage of goods on railways to port of shipment in England is 1d. per ton per mile, and in Belgium and Germany 3d. per ton per mile. The classification of charges, however, and the modes of measurement of different companies are much to be desired.

Add 15 per cent. for carriage and packing of stores in the United Kingdom.

TERMS AND CONDITIONS OF MERCHANTS.

The following are the principal business terms and conditions of sale as usually set forth by merchants in their catalogues, but they vary with the firm:—

Prices and Delivery.—The prices in this catalogue include (if a London firm) free delivery within town limits—i.e., Carter, Paterson, and Co.'s radius, about 10 miles from Goswell-road—London wharves and railway companies' termini. (It is frequently stated, "Prices quoted here, unless otherwise specified, at our works.") They are subject to alteration, without notice, in the event of any particular rise or fall in the value of materials or labour.

References.—To prevent delay, first order should be accompanied by remittance; and, in order to facilitate future business, trade references should be given to well-known firms in the United Kingdom (London houses preferred), before order accounts may be opened.

Remittances.—Remittances should be made payable to "— & Co.," and cheques crossed "Bank."

Terms.—Accounts rendered monthly, payable during month following, less 2½ per cent. discount. Quarterly and running accounts, net.

Cash Discount.—A discount of 2½ per cent. will be allowed for cash if paid within one month from date of invoice. Prompt cash, 5 per cent.

Overdue Accounts.—No discount whatever will be allowed off overdue accounts, which, if not paid within three months, or upon application, will be charged with interest at the rate of 10 per cent. per annum.

Packages.—No charges are made for packing and direction. Packing-cases are charged extra or separately, but two-thirds are allowed for "empties" returned in good condition within fourteen days from date of invoice, carriage paid, and duly advised. The following are the usual prices inserted in invoices for packing-cases:—

	Per ft. super.
Packing-cases, lin. deal, close	3d.
" " " open, skeleton or crate	2½d.
" " " close	3d.
" " " open, skeleton or crate	2½d.
Add to above if zinc-lined	1d.

Damage in Transit.—Goods are sent forward at railway company's risk, and if damaged goods are returned for replacement, they must be returned by same carriers, marked "Carriage Free—Damaged in Transit." In the event of packages appearing, when delivered, to be in a damaged state, it is recommended that delivery notes be signed as "Contents Not Examined," as, in the event of damage, claims can be sustained if notice be given to carriers within three days of date of arrival or delivery.

Shipping Orders.—A charge of 5 per cent. on the value of the goods is made on all shipping orders, to cover cost of packing and delivery to the docks in London. If required to be delivered free on board ship in London, a further charge is made to cover shipping expenses, dock dues, cramage, &c. If the goods are shipped from any other port than London, the cost of carriage to such port will be charged extra.

Special Quotations.—Where a quantity of goods of a similar description is required, a special quotation will be furnished on application.

The trade discount, as a rule, is not publicly stated in catalogues, but can only be obtained on

private application. Its amount greatly depends on the quantity of goods ordered, and the larger the order the larger the percentage given.

(To be continued.)

DILAPIDATIONS.*

DILAPIDATION is variously defined. One of the best definitions from the architect's point of view is that given in the report of the committee appointed by the Institute of British Architects; there it is stated that "Dilapidations are in usual practice considered to be those defects only which have arisen from neglect or misuse, and not to extend to such as only indicate age so long as the efficiency of the part still remains; but if the effects of use or age have proceeded so far as to destroy the part, or its efficiency in the structure, this argues neglect or misuse, it being the presumption that at the commencement of the term the tenant was satisfied that every part was sufficiently strong to last to its close." Dilapidations arise from waste, either voluntary, permissive, or malicious, the term "waste" being thus defined by "Grady"—viz., "Whenever there is a particular estate in lands or tenements which must, after the determination of such estate, devolve upon another, any defect in their condition is properly dilapidation, and the act of permitting or committing such act is called waste." It is necessary to consider

"WASTE"

in some detail and to refer to the principal divisions which are, as stated above, voluntary, permissive, equitable, or malicious. There is also ameliorating waste, as to which the architect is not often troubled. Of these the first two divisions—i.e., voluntary and permissive waste, are of great practical importance to the architect, being the kinds most prolific in disputes. Voluntary waste is actual or commissive. Permissive waste is a matter of negligence and omission only. Equitable or malicious waste consists in acts of gross damage, usually the cutting down of ornamental timber by a tenant without impeachment of waste. Ameliorating waste is such voluntary waste as improves the demised premises, such, for instance, as where the tenant puts a new front to his house. Having considered the meaning of the terms, "Dilapidation" and "Waste," it is proposed to consider the

OBLIGATION OF LANDLORD AND TENANT

under two heads, viz.:—(1) The obligations imposed by the Implied Covenants under the Common Law. (2) The obligations imposed by the Repairing Covenants in the lease. First, then, with regard to the implied legal liability to repair under the common law. Generally speaking, the lessor is under no liability whatever to do repairs. Where, however, the premises become subject to a structural defect, such as the drains, which may give rise to a nuisance or be dangerous or injurious to health, the tenant may, if the steps directed by the Public Health Act be taken, throw the liability for this repair or removal, in the absence of any agreement relating to the matter, upon the landlord. There is an exception to the rule that the lessor is under no liability to a tenant in the case of small tenements, for under the provisions of the Housing of the Working Classes Act (53 and 54 Vic. c. 70) a warranty that the tenement is reasonably fit for habitation is implied in the case of tenements let to members of the working classes at rents varying according to the locality; thus in London the rent must not exceed £20, in Liverpool £13, in Manchester and Birmingham £10, elsewhere in England £8, in Scotland and Ireland £4, but the landlord may contract out of his liability, and in practice generally does so. It often happens that during a tenancy the drains prove defective, causing possibly illness, expense, and death; but if the landlord has given no undertaking in the form of a guarantee that the sanitary arrangements are satisfactory, he cannot be called on by the lessee, except as stated above, to put right what is wrong, nor to recompense the tenant for the expense and loss he has been at. If the premises are let furnished it is an entirely different matter, for in that case there is an implied covenant on the part of the lessor that the house is in a fit condition for immediate occupation. One of the leading

cases on the implied covenant that a furnished house is fit for immediate occupation is that of "Wilson and Another v. Finch-Hatton," Exchequer Div. 2, 1876-7. In this case the defendant agreed to rent the plaintiff's house for three months from May 7, but having at the beginning of the tenancy discovered that the house was, owing to defective drainage, unfit for habitation, refused to occupy. The plaintiffs immediately set about repairing the drains, and on May 26 tendered the house in a wholesome condition to the defendant, who refused to occupy or to pay rent. The plaintiffs thereupon sued for the rent. It was held that the state of the house at the beginning of the intended tenancy entitled the defendant to rescind the contract, and that he was not liable for rent or for use and occupation. The decision in this case is founded on the well-known case of "Smith v. Marrable," generally alluded to as the famous "bug" case which decided as long ago as 1843 that it is an implied condition in the letting of a furnished house that it shall be reasonably fit for habitation, and that if it is not fit the tenant may quit without notice, and he would be justified in repudiating the tenancy, and, if he has incurred loss, be entitled to recover damages. With regard to the implied liability of the tenant under the common law, his responsibility is much greater than that of the landlord. There is the implied covenant to use the premises in a tenant-like manner. In dealing with houses or buildings, this obligation resolves itself into one to do repairs of a certain kind, the amount or character of which in the case of leases for years has apparently never been defined with precision, the reason probably being that such instruments almost invariably contain an express covenant which displaces the implied one by the tenant to the same effect. It will seem, however, from the authorities, that a tenant at will or a yearly tenant is bound to keep the premises wind and watertight; but as to this expression there seems to be considerable doubt in the minds of lawyers what it really amounts to. Woodfall considers that on the whole it is understood that the expression ought to be construed strictly in favour of the tenant, and quotes as an example that the broken glass of windows need not be replaced by new glass, but that the exclusion of wet by boards or other unsightly modes would be sufficient. In the case of a tenant for years he is liable under the implied covenants for permissive waste, but not for damage by accidental fire. A tenant for life is, in the absence of covenants to the contrary, under no implied liability to repair. We now pass to the consideration of the second head of the subject—viz., the obligation imposed by covenant. The distinction as between the common law obligation to repair and the liability as expressed by covenant is thus expressed in Gibbin's work—viz.: "The obligation imposed by the covenant to repair differs from the common-law obligation against permissive waste in this. The common law obligation is merely to guard the fabric of the building from decay, and is not infringed by an external dilapidation unless the fabric is injured in consequence. By the covenant, the tenant is unconditionally bound to repair all dilapidations, whether the fabric of the building is injured or not. Injuries to the building caused by inevitable accident are excepted from the common-law obligation, but not from the obligation of a general covenant." In the practice of valuing dilapidations under a repairing covenant the architect has to interpret the words of the covenant and then survey the property and prepare the schedule and claim, and it will be convenient to consider the subject under these two branches. Speaking broadly,

THE REPAIRING COVENANT IN THE LEASE

generally consists of two divisions: (a) An undertaking in general terms; (b) an undertaking to do certain acts of reparation, such as painting and papering, at specific periods. With regard to the general undertaking, it varies very much. In the more common forms it consists of an undertaking either to "keep and leave the premises in good tenantable repair," or to "keep and leave the premises in substantial repair." In considering repairing covenants for a proposed lease, the first point to be mentioned is the desirability, in fact, the necessity, if the tenant is to be properly protected, of making a survey of the premises. It should be pointed out to a tenant that a preliminary survey is absolutely necessary, when it is remembered that where the lessee covenants to "keep and leave the premises in repair" he is

* A Paper read before the Society of Architects, March 21, 1901, by Mr. W. J. JENNINGS, F.S.I. (Member of Council).

bound to keep them in repair, if at the commencement of the term they require it." *Prudfoot v. Hart* (11 Q.B. 541) decided this point. It should be remembered that the measure of damages for want of repairs during the existence of the lease is not necessarily the amount which it will cost to execute the work; for not only is the tenant bound to carry out the repairs necessary, but is liable in damages if it can be proved that the value of the reversion is lessened. The rule for this is laid down in the case of *"Williams v. Williams"* (L.R. 9, C.P. 659). As to the covenant to repair, take the case first suggested—*Prudfoot v. Hart*, where the lessee undertakes "to keep and leave the premises in good tenable repair." The arbitrator is asked to prepare a schedule of dilapidations to be served upon the tenant for him to carry out, or a claim for a money payment in lieu thereof, and the question arises, What is "good tenable repair"? Previous to 1890, there was considerable difference of opinion as to what was meant by the words, but in that year the case of *"Prudfoot v. Hart"* was tried, and a determined effort made by the Judges in the Court of Appeal to deal with the question, and they proceeded to give a definition of the words and to illustrate the application of the principle they laid down. It was a case originally tried before an Official Referee, who held that the tenant's obligation was to repaper with similar paper to what was on the walls before, and to repaint with similar paint to that which was on the painted portion of the premises. On appeal to a Divisional Court it was held that the Official Referee was wrong. Mr. Justice Cave stated that tenable repair extended to commissive waste undoubtedly, and, he also thought, to permissive waste, and that the tenant must make good the damage going beyond ordinary wear done by his family and servants, but that he must also make good the damage done by other causes, such, for instance, as a casual storm that takes off a slate from the roof, or a stone thrown from outside which breaks a window, and if the tenant neglects to do these things, and the result is that still further damage is caused to the structure, then he must make good that further damage also, because it comes of his not performing his covenant to do tenable repairs. With regard to paper and paint, he thought that the tenant could not be bound to repaper or repaint simply because the former paper was worn out and the paint worn off, so long as no damage is done to the walls and woodwork by omitting to paper and paint; also with regard to whitewashing, if the ceilings as a natural result of tenancy became black the tenant was not liable to whitewash them. So with regard to the walls, the floor, the doors, the windows, and all the different parts of the house, Justice Cave thought the tenant was bound where there was a breakage, whether arising from his own family or from some external accident, to repair it to the best of his ability, but was never bound when a portion of the structure had become absolutely worn out, and it was necessary to substitute a new structure in place of it. All he thought that the tenant undertook to do was to patch the thing up so long as it was in the nature of things right and reasonable that the thing should be patched up, but when it had got to such a state that patching up was of no avail, then the tenant was not bound to put in anything new or to pay any proportion of the cost of putting in the new thing because the old one had become unfit to discharge its duty. Had this view been successful it would have rendered a tenant's liability under a covenant for tenable repair even less, or at any rate of not greater value than it is now with the addition of the words "fair wear and tear excepted"; but when the case came before the Court of Appeal, the Court, without holding that the judgment of either the Official Referee or the Provisional Court was wrong, adopted the alternative of themselves saying that they did not agree with either, and proceeded to lay down the principles upon which the case should be decided. The Master of the Rolls, Lord Esher, adopted the definition of Lord Justice Lopes as to good tenable repair, which, he said, meant, "Such repair as, having regard to the age, character, and locality of the house, would make it reasonably fit for the occupation of a reasonably-minded tenant of the class who would be likely to take it," and he proceeded to point out that while the question whether the house was or was not in tenable repair when the tenancy began was immaterial, yet the age of the house is very material with respect to the obligation both to

keep and leave the premises in tenable repair, it being obvious that the obligation is very different when the house is 50 years older than when the tenancy began; the age of the house must, therefore, be taken into account, because nobody could reasonably expect that a house 200 years old should be in the same condition of repair as a house lately built. The character of the house must be taken into account because the same sort of repairs that would be necessary to a palace would be wholly unnecessary to a cottage, and the locality of the house must be taken into account because the state of repair necessary to a house in Grosvenor-square would be wholly different from the state of repair necessary for a house in Spitalfields. There is no liability on the part of the lessee to put the house in the same state of repair that it was when he took it; it need not be put into perfect repair, nor is there any liability to paint or paper, but if the paint and paper is in such a condition that no reasonably-minded person of the class likely to take it would live in it, then the lessee is bound to paint and paper. Again, it does not follow that the painting and papering must be of the same class as at the commencement of the lease. There might be such expensive papers and such decorative paintwork as would be inconsistent with the requirements of the class of persons likely to take the house, and because special painting and papering existed at the commencement of the lease this would not render it incumbent upon the lessee to paint and paper of the same character. It must not be forgotten that if the premises are out of repair when the lease is entered into, the tenant is bound to put them into good tenable repair. It is also clear that the tenant must commit no waste. The application in actual practice of the principles laid down by the Master of the Rolls is not so easy as it might appear at first sight. The Judge allowed himself a very wide latitude in the illustration he gave, for he said: "If when the tenancy ends the paper on the walls is merely in a worse condition than it was when the tenant went in, the mere fact of it being in a worse condition does not impose any obligation on the tenant to repaper. If it is in such a condition that a reasonably-minded tenant of the class likely to take houses in Grosvenor-square (the hypothetical case with which the Judge was dealing) would not think the house unfit for occupation, but suppose the damp had caused the paper to peel off the walls and it was lying upon the floor so that the tenant would think it a disgrace, I should say then that the tenant is bound to put up new paper. The same view applies as to painting. If the painting is in such a state that the woodwork will decay unless it is repainted, it is obvious that the tenant must repaint; but I think that the obligation goes further than that. A house in Spitalfields is never painted in the same way as one in Grosvenor-square; if the tenant leaves the house in Grosvenor-square only good enough for a house in Spitalfields, he has not discharged his obligation: he must paint it in such a way as would satisfy a reasonable tenant taking a house in Grosvenor-square." To pass to the obligation under the second kind of repairing covenant—*viz.*, under which a tenant is bound to

"WELL AND SUBSTANTIALLY REPAIR,"

great difficulty often arises in the cases of old buildings under a lease granted many years ago containing a general covenant to repair in some such terms as the following—*viz.*, that the lessee shall "well, sufficiently, and substantially repair, uphold," &c. At the expiration of the lease the tenant may be called upon to carry out such sweeping works as amount practically to rebuilding. Generally the matter is settled by a money payment; but before this can be arrived at, it is necessary to say what repairs the tenant is legally liable for under the covenants of the lease, and in arriving at a decision it is very important to consider carefully the age and general condition of the building as it would have been at the commencement of the term, as where an old building is demised and the lessee enters into a covenant for substantial repair, it is not meant that the old building is to be restored in a renewed form at the end of the term, or of greater value than it was at the commencement of the term. What the natural operation of time flowing on effects and all that the elements bring about in diminishing the value constitute a loss which so far as it results from time and nature falls upon the landlord. This was laid down very clearly by C. J. Tindall

in *"Gutteridge v. Maynard"* (1 Moad and Rab at p. 336), and this view was adopted in the Court of Appeal in the case of *"Lister v. Lane"* (1893, 2 Q.B. 217). This case is so important that a short summary of it may be found useful. It was a lease of a house in Lambeth, containing a covenant that the lessees would, when and where, and as often as occasion shall require, well, sufficiently, and substantially repair, uphold, sustain, maintain, amend, and keep the demised premises, and the same so well and substantially repaired, upheld, sustained, maintained, amended, and kept, and at the end of the term yield up to the lessors. Before the end of the term one of the walls was bulging out and after the lease had expired the house was condemned as a dangerous structure and was pulled down; the lessors sought to recover from the lessees the cost of rebuilding the house. The house was at least 100 years old, and probably much older; it was built upon a timber platform resting on a boggy or muddy soil, and the bulging of the wall was caused by the rotting of the timber. The solid gravel was 17ft. below the surface of ground. There was evidence that the wall might have been repaired during the term by means of underpinning. It was held that the defect, having been caused by the natural operation of time and the elements upon a house, the original construction of which was faulty, the lessees were not under their covenant liable to make it good. With regard to the question of underpinning, which it was contended might have been done to prevent the wall bulging, it is to be borne in mind that this would not have been "repairing" the thing that was put in originally—*viz.*, the timber platform, but it would have been something of quite a different character, and this being so there was no liability upon the tenants to carry out underpinning, and it was out of the question to repair the timber platform without pulling down the house, and however large the words of the covenant to repair may be, a covenant to repair is not a covenant to give a different thing to that which the tenant took when he entered into the covenant; he has to repair that which he took, not to make a new and different thing, and, moreover, the nature and condition of the house itself, the result of time upon that state of thing, is not a breach of the covenant to repair. The Lord Chief Justice in this case said: "You have to look at the condition of the house at the time of the demise, and amongst other things the nature of the house, what kind of a house it is; if it is a timber house the lessee is not bound to repair it by making a brick or a stone house, if it is a house built upon wooden piles in soft ground the lessee is not bound to take them out and put in concrete piles."

ALL FIXTURES AND FITTINGS

belonging to the freehold are subject to the same conditions as regards repairs as the house or building itself, but in practice cases occur where the ownership of the fixtures is disputed. The rule with regard to fixtures used to be much more stringent than it is now; at one time everything affixed to the premises was held to go with the freehold, but this rule has been considerably relaxed by recent decisions. There is a very recent case bearing upon the question of fixtures, which was decided by the Court of Appeal only a month or so ago. It is the case of *"Ward v. Taylor in re De Falbe,"* where Mr. J. Byrne held that some pieces of tapestry which had been affixed by the tenant for life of freehold estates to the walls of the drawing-room of the mansion house passed on her death as fixtures, with the estates, to the persons entitled in remainder. The residuary legatee under the will of the tenant for life appealed. Lord Justice Rigby, in giving judgment, said that the representative of the tenant for life stood in the same position as the tenant for life herself with regard to the remaindermen. At one time anything whatever affixed to the freehold was held to go with the freehold, and it was only by slow degrees that that unbending rule had been modified. But in later times important exceptions from the rule had been established. One exception entitled a person who had put up fixtures for trade purposes to remove them. That exception was not confined to the case of landlord and tenant, but extended to the case of a tenant for life and remaindermen. Another very important and well-established exception existed in the case of articles affixed to the freehold, not for the purpose of enhancing its value, but for purposes of orna-

T. de C. ...

The Countess of Dartmouth laid on Friday the foundation-stone of a chancel which is being erected on the site of a Church mission-room in the New-road, Great Bridge, and will form part of a new church to be dedicated to St. Luke. The chancel is to cost £600. The work is being carried out by Messrs. Smith and Son, West Bromwich, from plans by Mr. Jabez Pearson, Great Bridge.

Building Intelligence.

PLAYFAIR.—The foundation-stones of the new Wesleyan Church, Boston, Nottingham, were laid on the 14th inst. The premises comprise a nave with a transept and choir gallery, and school in the rear portion of the site. In the church, which has a gallery round three sides, there is accommodation for about 750 persons. Ample seating accommodation is provided for the minister, choir, &c. The organ will be placed behind the choir gallery, and the rostrum in front. The school premises consist of a large assembly-room, an infants' school, an adults' classroom, a ladies' room, and seven classrooms which are grouped round the large room and open out to it. The exterior, designed in the Decorated style of Gothic architecture, is of pressed brick with facings and tracery windows in stone. At the south-west corner is placed a tower and spire, rising to a height of about 100ft. The cost of the entire building will be about £7,000, and the church portion is at present in course of erection. The architect is Mr. W. J. Morley, F.R.I.B.A., of Bradford and Thurgate.

SHREWSBURY.—The railway station, which is jointly owned by the Great Western and the London and North-Western Companies, has for years been not only inadequate, but positively dangerous. The work of building a new station has now been commenced. The engineering difficulties have been considerable owing to the fact that the existing station—which occupies the only available site—is closely hemmed in by the Castle on one side and by the gaol on the other. All the space available is, however, being taken advantage of by doubling the width of the present bridge over the Severn. The new scheme provides for approaches to the station from either side, instead of the Castle side only as hitherto, and in addition to up and down platforms for through traffic, there will be an "island" platform for local traffic. A subway, lined with enamelled white bricks, will provide access to the various platforms. The building of the new station has necessitated the demolition of many old houses in the vicinity, and a portion of Howard-street has been diverted. The existing bridges over Castle Foregate and Cross-street will be extended laterally.

The foundation-stone was laid on Friday of an infant boarding-school for Bally and Hexthorpe. The school, necessitated through the rapid growth of the township. The land has cost £500, and the contract price for the building £3,321. Mr. F. W. Masters is the architect, and Messrs. D. Gill and Nott are the builders.

The industrial district of Merthyr Tydfil is now provided with an electric railway, which has been constructed by the British Electric Traction Company. The new lines, connecting Merthyr with Dowlais and Cefn, will serve localities immediately occupied by a population of 50,000 people. The road to Dowlais (two miles) is as steep as one in twelve in some parts.

It has been decided, on the invitation of the Hampshire, Dorset, and South Wilts Provincial Committee, to hold the next county meeting of the Institution of Surveyors at Southampton, on May 30 and 31. The first day will be devoted to papers and discussions, with a dinner in the evening; the second day to excursions to various places of interest in Southampton and its neighbourhood.

Steady progress is being made in building the nave to Truro Cathedral, under the direction of Mr. Frank L. Pearson, the architect. The flying buttresses are now all completed, the whole of the tracery to the windows of the north nave clerestory is fixed, and that of the windows of the south clerestory is rapidly approaching completion. The tracery of the great west rose window is already, to a large extent, visible from the High Cross, and the walls of the western towers are beginning to rise. The noble gift of £10,000, anonymously given, will allow of the immediate undertaking of the great central tower as a Queen Victoria memorial.

The Castle Ward Rural District Council have approved of the sewerage and sewage disposal scheme for Dunnington Colliery, prepared by Mr. Harry W. Taylor, A.M.I.C.E., of Newcastle-on-Tyne and Birmingham, and application to the Local Government Board for borrowing powers for £2,000 has been made. The sewage will gravitate to the outfall, and be treated bacterially. The Ashbourne Rural District Council have engaged Mr. Harry W. Taylor, A.M.I.C.E., of Newcastle-on-Tyne and Birmingham, to prepare a scheme of water-supply for Kirk Ireton.

PROFESSIONAL AND TRADE SOCIETIES.

NORTHERN ARCHITECTURAL ASSOCIATION.—At the last meeting of this association Mr. J. M. Brydon, F.R.I.B.A., of London, gave an address in the Royal Institution on "The Work of Professor Cockerell, R.A." Mr. Henry F. Kerr occupied the chair. In the course of an appreciation of Cockerell's great work as architect and student of sculpture, Mr. Brydon spoke of the architectural environment of his time. Then the battle of the styles was in full swing, and there was found in Cockerell a great artist and scholar who combined the adaptability of the Italian with the refinement of the Greek, while all through his work there ran the impress of the individuality of the man himself. In the design of the National Monument on Calton Hill, Mr. Brydon afforded evidence of Cockerell's participation. He admitted that his connection with the work came as a surprise to him, as doubtless it would be to some of his audience. Cockerell's original sketches and drawings (which were exhibited to the meeting) were the first idea of the monument, which was to be a reproduction of the Parthenon. The foundation-stone was laid in 1822, and Cockerell's sketches enabled one to see the mode by which the interior of the monument was intended to be lighted. The method seemed to forestall the clerestory theory of the lighting of Greek temples. There were also shown the working drawings by Playfair of the portion erected in 1826. Between the preparation of Cockerell's sketches and the laying of the foundation-stone of the actual commencement of the work of Playfair's drawings, said Mr. Brydon, there was an interval of some years, and one could only conjecture that something had occurred which caused the transference of the work from one architect to the other, or that the two architects went in conjunction under some arrangement, the traces of which were now lost. The two must have been congenial spirits, alike in their knowledge and devotion to the study of Greek art. Vaulting ambition again, however, overleaped itself. The monument was never completed, and to-day it looked more like the ghost of the Parthenon than was. Nevertheless the spirit of the Greek temple was in the fragment on the Calton Hill. Its exquisite proportion, its beauty of detail, showed the artist's true spirit. Fortunately also were they in the magnificent stone of which the fragment is built—being as sharp as on the day in which it was put up. The site plan curiously was not among the Cockerell collection. Whether that was sent to Playfair or not he could not say. There was no doubt the intention was to represent the Parthenon. In the elaborate account of the laying of the foundation-stone there was curiously not a word said about the architect. It had always been his impression that they began the building with the idea that they were going to make a reproduction of the Parthenon, and that they went on until the money stopped. Playfair's drawing was the contract drawing for exactly the piece that was built and nothing more. In the discussion following upon the paper, Mr. Hippolyte Blanc said the information about the monument was certainly new to him. The question of the completion of the monument had been recently opened up as a suggested memorial to the late Queen, but he could not but feel that with the evidence of the intention to build only a certain part of the structure there was a sacred thought in the minds of those who had schemed the monument that it should never be other than the suggestion of a ruin. On the motion of Professor Baldwin Brown, Mr. Brydon received a hearty vote of thanks.

EDINBURGH ARCHITECTURAL SOCIETY.—A meeting of this society was held on the 13th inst. in Dowell's Rooms, Mr. A. F. Balfour, president, in the chair. Mr. J. Stuart Syme gave a lecture upon "Sanmicheli and his Work," in which, after referring to Sanmicheli's position in regard to the architecture of the Italian Renaissance, he described his early training and studies at Rome and Orvieto. The great achievement of Sanmicheli in military architecture, and the palaces and ecclesiastical work designed by him, were also referred to; and the lecture concluded with remarks upon his chief artistic and personal characteristics.

NORTHERN ARCHITECTURAL ASSOCIATION.—Mr. Wm. Glover, F.R.I.B.A., has this year, because of rule, to retire from the presidentship of the Northern Architectural Association, after

holding the office for two years. So pronounced a success has he been in the chair that but for the forbidding enactment referred to he would have been asked to remain as chairman for another twelve months. This was made known at the annual meeting of the Association, held at 36, Northumberland-street, Newcastle, on Thursday, the 14th inst. Mr. Frank Caws, F.R.I.B.A., of Sunderland, was chosen to take Mr. Glover's place. The annual report, presented by Mr. Arthur B. Plummer, showed that during its forty-second session the association had become increasingly successful. During the year one member, five associates, and twelve students had joined, making the roll stand at—54 members, 71 associates, and 61 students, or 186 in all. Reference was also made of the promise of £500 made by Mr. Glover towards obtaining a building for the association if an equal sum could also be raised, and to the good progress made with regard to securing other money gifts. The report was accepted. The statement of the hon. treasurer, Mr. J. T. Cackett, showed a balance in hand of £89, or a gain of about £35 on the year. This, too, was agreed to. An election of officers followed, and resulted as under:—Vice-president, J. W. Taylor; hon. secretary, A. B. Plummer; hon. treasurer, J. T. Cackett; hon. librarian, H. C. Charleswood. Council: R. B. Dick, J. W. Donald, R. J. Leeson, J. Oswald, T. Reay—members; J. W. Boyd and R. P. S. Twizell—associates.

CHIPS.

The Winsford Urban District Council have decided to purchase the undertaking of the Over and Wharton Gas Company for £15,862. It was resolved to apply for a loan, extending over 30 years, of £17,500.

The restoration of Canterbury Cathedral is steadily progressing. The latest work taken in hand is the cleaning and polishing of the two pinkish marble columns in Trinity Chapel. These pillars, which came from the ruins of ancient Carthage, were sent to Canterbury in 1176 by Pope Alexander III., to form part of Thomas à Becket's tomb. They were not, however, used for that purpose, but were placed in the positions they now occupy. The relics discovered in the tomb of Archbishop Hubert Walter some 16 years ago have now, by order of Dean Farrar, been deposited in a cupboard in the Henry IV. Chapel, and, together with Archbishop Walter's pastoral staff, can be readily viewed.

The War Office has decided to purchase additional land at Colchester with a view to the more effective manoeuvres of troops, and they have also ordered that the already extensive range of buildings known as the Mobilisation Stores shall be added to at a cost of £6,000.

The subject of the housing of the poor dispossessed of their dwellings by the demolition of insanitary property was discussed by the Liverpool City Council at their last meeting. It was resolved that the Housing Committee be instructed to submit at an early date a scheme for the adequate rehousing of the tenants of the 8,184 insanitary dwellings in the city that are to be demolished.

The Duke of Norfolk has agreed to purchase the Brooks at Arundel from the town council for £31,000, and to present to the borough property worth £10,000 for public improvements.

The new town-hall and county-courts recently erected at Merthyr Tydfil, from designs by Mr. E. A. Johnson, F.R.I.B.A., of Abergevenny and Merthyr, are about to be painted and decorated under his superintendence by order of the council.

Trinity Wesleyan Church, Whitley, Northumberland, was reopened for service on Saturday after enlargement and decoration. The enlargement consists of a new Sunday-school and vestries, and the addition of a chancel to the church. A stained-glass window has been erected as a memorial. The cost of the additions, including the enlargement of the organ and the decoration of the church, amounts to £3,000. Mr. J. L. Miller, of Tyneworth, was the contractor.

A new Board school, accommodating 800 children, and erected at a cost of £6,400, was formally opened on Saturday by the Mayor at Bearwood-road, Smethwick.

The River Tyne Improvement Commissioners have decided to raise the salary of their engineer, Mr. Walker, from £1,200 to £1,500 per annum.

The King has, as is mentioned elsewhere, consented to continue to be the patron of the Royal Institute of British Architects, and to offer, as her late Majesty did for over fifty years, an annual Royal Gold Medal to be presented on the nomination of the Royal Institute to a distinguished architect or architectural writer of any nationality.

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ROYAL VICTORIA INFIRMARY, NEWCASTLE-ON-TYNE.—ST. JOHN'S CHURCH, NEWCASTLE, AND DESIGN OF A GENERAL CLUB-HOUSE AT EALING.—A STREET OF HOUSES IN THE PREPARED DESIGN OF THE NEW TOWN OF EALING, STANSEA.

Our Illustrations.

NEWCASTLE ROYAL INFIRMARY.

We publish this week a perspective view of the above, the erection of which is now to be proceeded with, part of the work already being commenced. When completed, the new infirmary will undoubtedly be the largest building in Newcastle. Standing upon a site of ten acres on the Leazes, it will occupy an area of over 108,000 superficial feet. There will be accommodation for over 1,000 beds, of which about 180 are for medical cases, and 220 for surgical cases. There are eight ward pavilions; all the surgical patients are accommodated on the ground floor, the medical wards being on the first floor, and the children in a separate pavilion. The administrative department is centrally situated among the wards, and entered by way of a carriage porch. It contains all the necessary rooms for officers and staff, as well as students. The kitchen department is arranged on the second floor. The nurses' home, accommodating over 100 nurses, is arranged at the extreme west of the main corridor on the highest part of the site, and is reached by way of a spacious glass corridor and conservatory. The chapel is on the north of main corridor and west of the central staircase, and will seat over 150 besides having a gallery for the nurses. The outpatients' department is at the east of the main corridor and close to the porter's lodge. This building is only one story in height. The rooms for the reception of accidents, &c., are at the rear of the administration building. The operating theatres are on the ground floor, level with the surgical wards. The laundry and boiler house are at the south-west corner of the site, this being at the lowest level. The elevations will have red brick and stone facings, and the roofs will be covered with Westmoreland slates. It was announced last week that Mr. Watson Armstrong had given £100,000 to be used at the discretion of the committee for the infirmary, and Mr. John Hall, some two years ago, left a similar sum, while Sir Riley Lord has raised over £100,000 in public subscriptions for the same purpose, so that the committee have considerably over £300,000 assured. It is anticipated that the buildings will cost rather over £200,000. The architects are Mr. W. L. Newcombe, of Newcastle, and Mr. H. Percy Adams, of 28, Woburn place, London, who are in this matter acting conjointly.

ST. JOHN'S CHURCH, NEWCASTLE, N.S. This Episcopal church, from the designs of Mr. F. R. Comstock, architect, of New York city, has been erected in Connecticut brown stone, and roofed with black slates. The roof inside is executed in solid quartered oak. The sketch-plan, which the architect has sent us with the two perspective sketches, shows the manner of seating, and the church rooms flanking the

chancel, which is apsidal. The organ is on the right of the choir, and the pulpit on the northern respond of the chancel archway.

(For description and awards see p. 397.)

THE HOUSE AT EALING.

The accompanying drawing illustrates a house recently erected from the designs of Messrs. A. Burnett Brown, F.S.I., and Ernest R. Barrow, A.R.I.B.A., at Ealing. The lower portion is faced with red bricks relieved with stone dressings; the upper portion being treated with rough-cast and half-timber, and with a Broseley tile roof. The plan gives the arrangement of the ground floor, and there are seven bedrooms and usual offices over. The building contract has been executed by Messrs. T. H. Adamson and Sons, of Ealing and Chiswick.

A SELECTION OF CHAIRS: NATIONAL SILVER MEDAL DRAWINGS.

MR. WILLIAM L. WHITMAN, of Dublin, won a silver medal for these drawings, and the following notes describe the objects selected for illustration. Roman Armchair found at Herculaneum, now in the Museum at Portici. The Chair of St. Peter is of the Byzantine period, made of wood, and overlaid with carved ivory and gold. The front is elaborated with eighteen compositions representing the Gospels, delicately carved, and worked with pure gold inlay. The chair is square, and the front is solid. The Bisellium or Magisterial Chair, of antique Roman date, is now in the museum at Dublin. The four ornamental pillars or legs are bound together by horizontal bars, damascened in silver. The upper part is filled in with a voluted ornament, terminating with heads in medallions. It was found at Pompeii, and is made of bronze. The Saxon chair, from Leicester's Hospital at Warwick, is reputed to be of that period. The triangular seat and details are very primitive, the ornament being simply incised with gouge forms. The famous and well-known Coronation Chair is made of oak, fastened together with pins, and has a crocketed-gable back. The whole is covered, or rather was covered, with gesso and gilded. Inside the curved shaped arms the panelling is plain; but outside it is traceried; it was decorated by "William the Painter" for Edward I. The Chair stands in Westminster Abbey, behind the reredos of the High Altar. The famous Tapestry or Frieze of Scene, on which the Scottish kings were crowned, was inclosed within the body of this chair by Edward III. (1328) and an iron handle is provided to lift it by. The chair has for some long period been covered with cloth of gold when used at coronations, and by this means much of the original decoration already mentioned has been chipped off by the use of nails. In this chair all the Kings of England since the time of Edward I. have been crowned. Even Cromwell was installed in it as Lord Protector in Westminster Hall, and that was the only occasion on which it has been carried out of the Abbey. For coronations it is placed in the centre of the choir in front of the high altar. Shakespeare makes Eleanor Duchess of Gloster say:—

methinks I sit in seat of majesty
In the Cathedral Church of Westminster.
And in that Chair where kings and queens are crowned.
—2 Henry VI. act i. sc. 2.

The Vestry Chair of York Minster is of late 14th century. There is a Gothic chair to be seen also in St. Mary's Hall, Coventry, of 15th-century date. The Yorkshire chair, A.D. 1620, is of a common pattern in those parts. The bridge shape of the back, with the acorn droppers, makes a curious variety, and the crescent shape is unusual, as are the planted-on turned ornaments applied to the fronts of the uprights. The 16th-Century carved and turned Chair has pierced cross-rails, and on the back the stamped buff leather is relieved in gold elegantly detailed. The second leather backed Seat of same date, also of Italian design, has a carved front rail and shaped floor pieces. The whole is painted and gilded, a feature being made of the large and small headed nails with which the leather is fixed. The detail is refined, and the piece is very heavy, so that the chair evidently was not intended to be moved frequently. The English Chair from Dublin of 50 years later date (1670) is now in replica in Dublin, and bears the

initials H. P. I. on the top panel of the back. The Rush-seated Chair from Dublin Museum is curious from having a dish-shaped top rail to its back and turned balustered filling. A sketch of a somewhat similar back from the same collection is also shown as typical of Jacobean design in furniture. The Queen Anne Chairs are both from Dublin. The richer one has the carved back, the cabriole legs and splat made up of a greater number of curves than the other, while round the seat are carved verge adjuncts. The top cross rail is finished off in a shell-like shaping. The plainer example is characteristic of the 18th century—viz., the cabriole legs and splat-shaped back very different from the earlier oak chairs. No piercings relieve the splat, which looks all the better for being simply curved in section. The 17th-Century Scroll-design Chair, well and ingeniously proportioned, made in walnut, and carved with a little inlay on the back, is prettily patterned in the Italian manner. On Jan. 25 last we gave another sheet of chairs from the same prize set of drawings.

SWANSEA BUILDING TRUST OFFICES.

This design was favourably mentioned by the assessor, Mr. W. M. Fawcett, F.S.A. Only two premiums were offered, and we illustrated the first premiated last Friday, and shall illustrate the second premiated design shortly. In the present design the main block of buildings is shown to be of two stories throughout, and faced on every elevation with pressed Ruabon red brick, with terracotta or stone dressings. The ground floor provides accommodation for the shipping office, the accountant and the clerk and solicitor, with suitable lavatories. The first floor is planned to accommodate the general superintendent and the engineer and their staffs; also the board-room and chairman's room, &c. A caretaker's house of two stories is also included, and the cost of the whole buildings complete was designed not to exceed the sum of £12,000, which was the limit fixed by the competition conditions. Mr. William C. Laidlaw, of Edinburgh, is the author of this design.

ROYAL ACADEMY EXHIBITION, 1901.

THE one day on which architectural drawings may be sent in is Friday next, March 29, and these must be delivered by a personal agent to Burlington House, and no works in cases will be received. On Saturday, March 30, and on Monday, April 1, oil paintings are to be sent in; Tuesday, April 2, is reserved for Sculpture. The necessary forms and labels can be procured during the month of March only from the Academy on receipt of a stamped and directed envelope. Only gilt frames are admissible for architectural drawings.

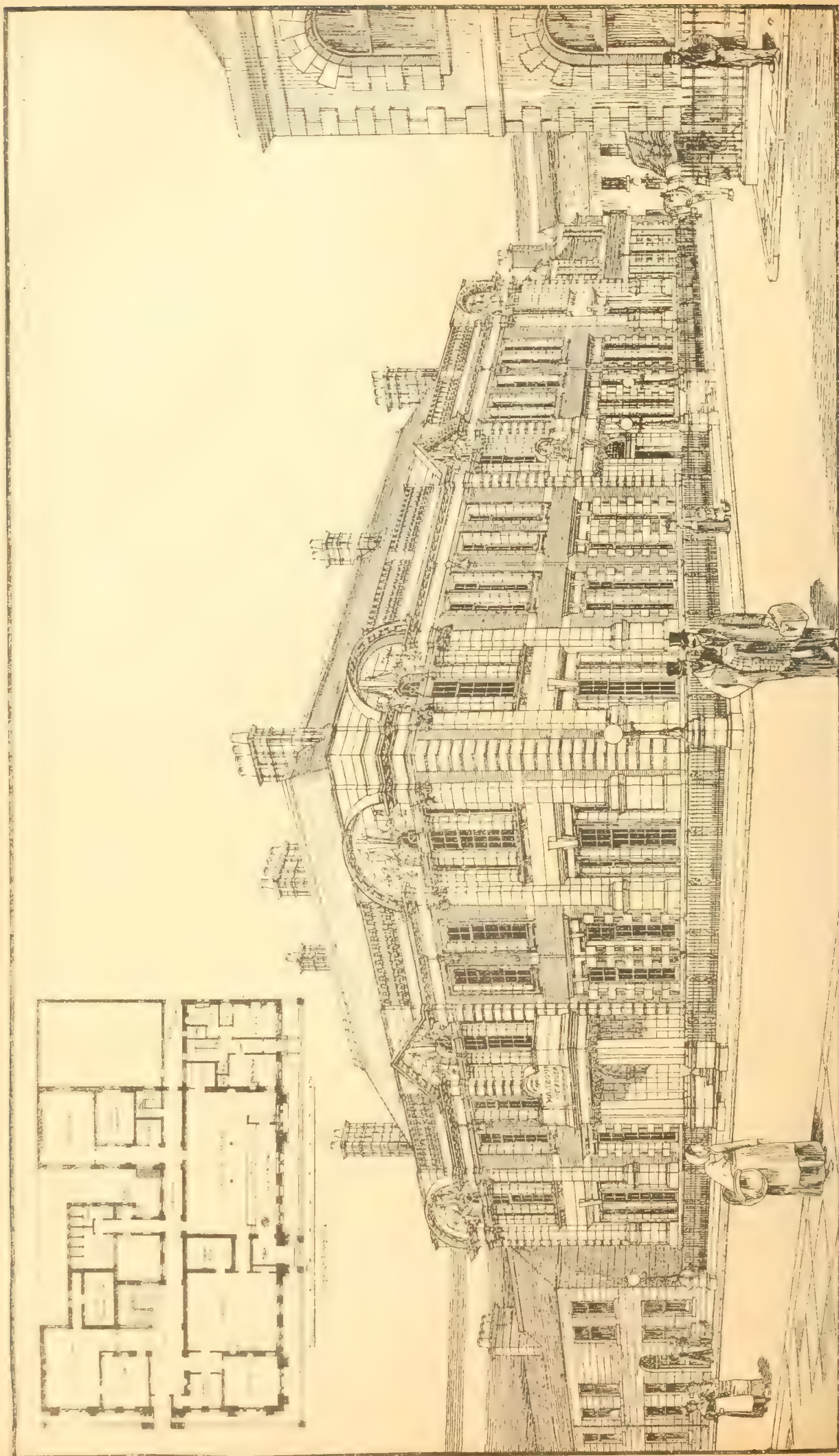
We shall be glad if our readers who intend to submit works will send their drawings to us to be photographed before they are forwarded to the Exhibition, so that our reproductions of accepted works may be included in our series of Academy illustrations, which will be published after the galleries open, as in former years. We will receive and deliver works for our contributors; but the labels, &c., as above, must be sent complete with the framed drawings ready for despatch to the Exhibition.

A well-attended conference on the housing of the working classes was held at Leeds on Saturday, under the auspices of the National Reform Council. A resolution was passed urging the city council to make a vigorous use of their powers under the Housing of the Working Classes Act, 1890, and it was further decided to form a Leeds Housing Reform Council to work on non-party lines in the direction of practical housing reform.

The town council of Torquay have decided to grant increases of salaries to the following officials: Town clerk, £350 to £450; water engineer, £250 to £325; and electrical engineer, £200 to £300.

MR. R. H. Bicknell, Local Government Board inspector, held an inquiry on Friday into an application by the Salford Town Council for sanction to borrow £3,771 for purposes of electric lighting, £5,500 for the construction of a footbridge over the Irwell, and £1,000 for purposes of a highway depot in Strawberry-road, Pendleton.

COUNCIL OF L. E. L. held an inquiry at Nottingham into the application of the city council to borrow £10,000 for purposes of street improvement in Parliament-street, Nottingham, and also for the reconstruction of Clarendon-street Bridge.

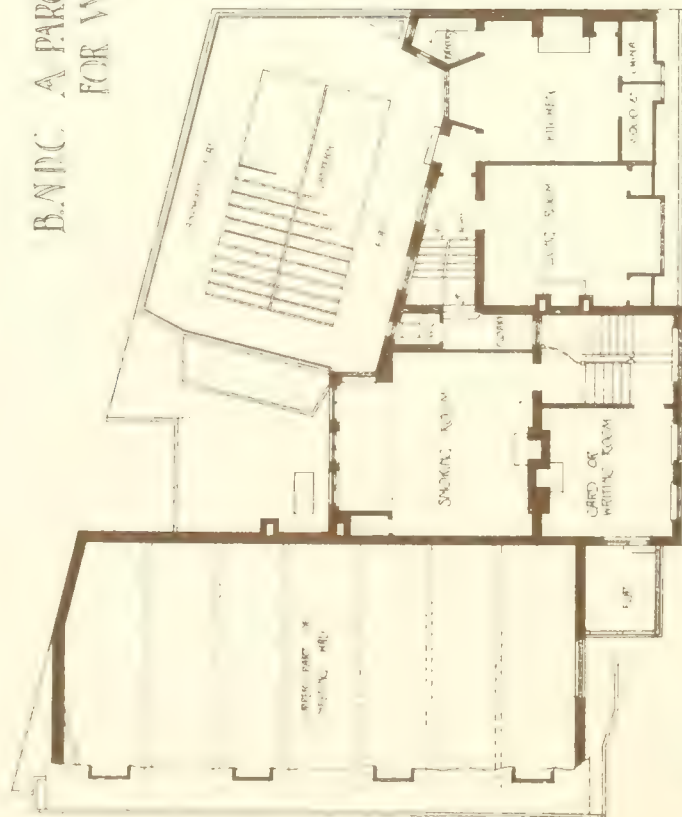


NEW HARBOUR OFFICES, SWANSEA—THIRD PRIZE DESIG.—W. C. LAYDLAW, Architect.

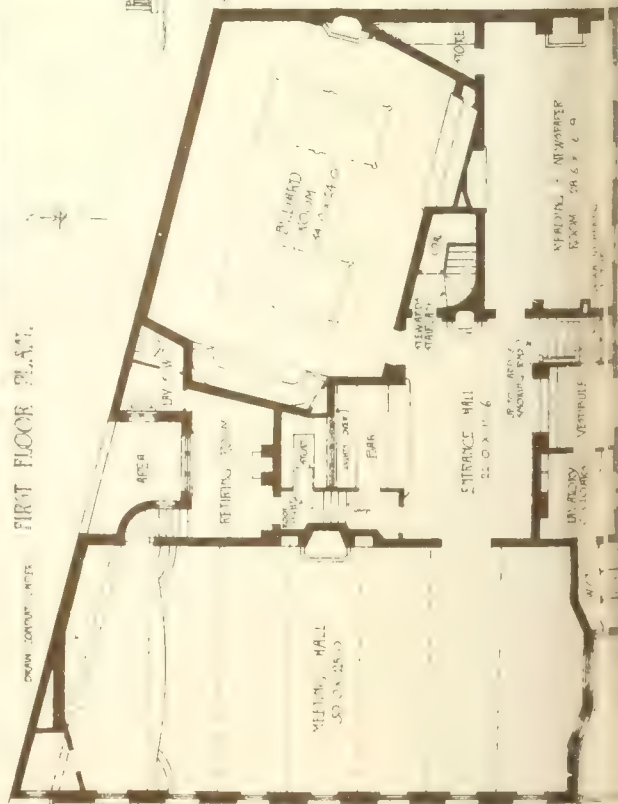
B.N.D.C. A PAROCHIAL CLUB FOR WORKING MEN.

BY OBIT

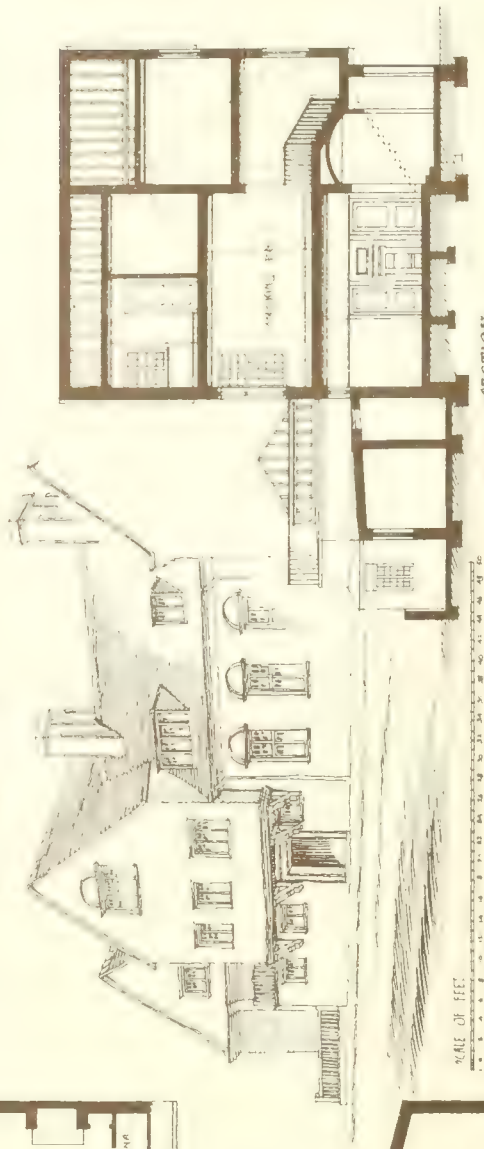
PLACED FIRST.



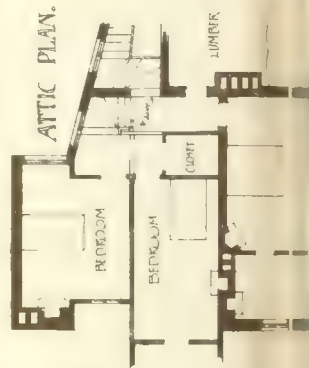
FIRST FLOOR PLAN.



SOUTH ELEVATION.



SECTION.



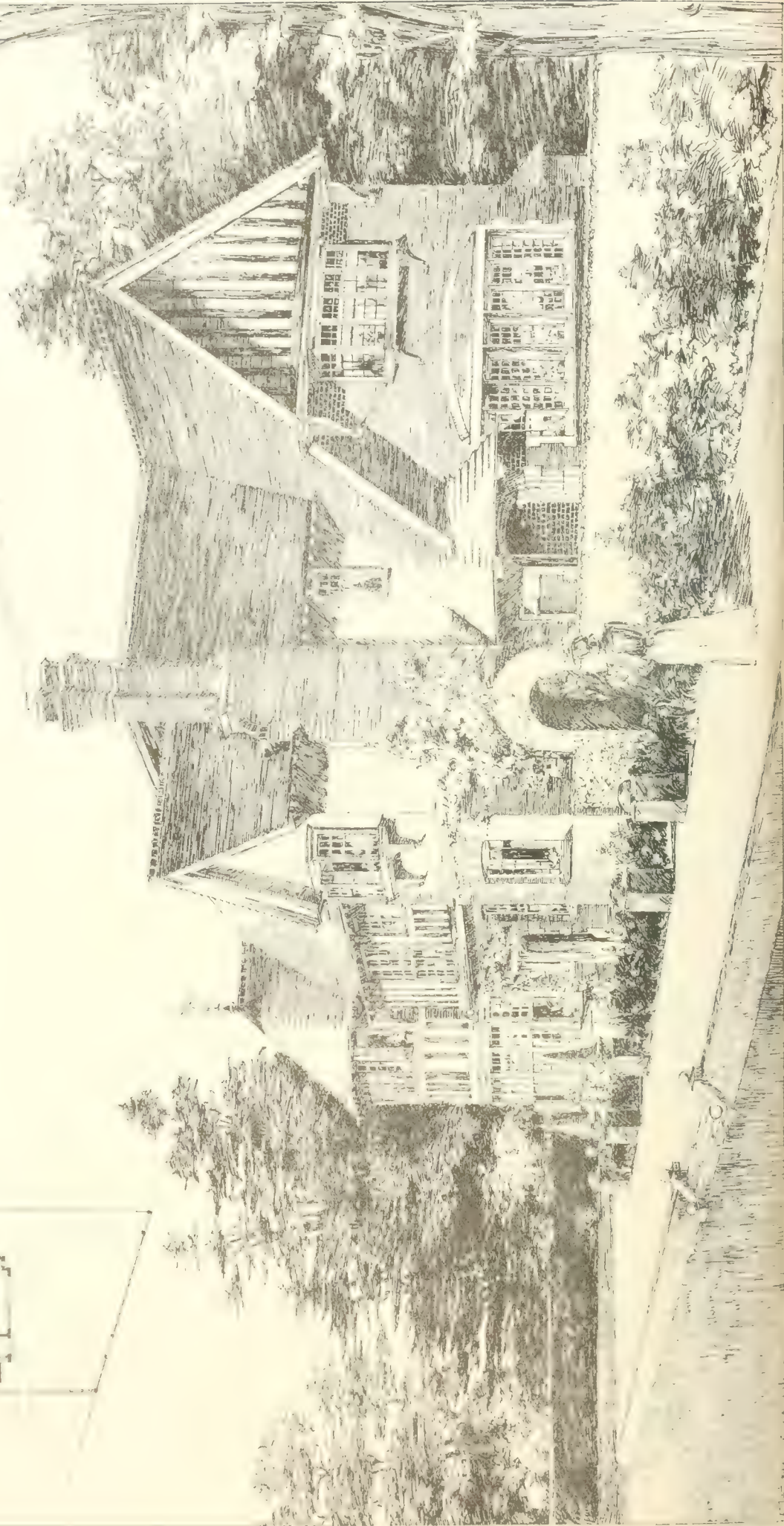
ATTIC PLAN.

FRONT & REAR OF BUILDING



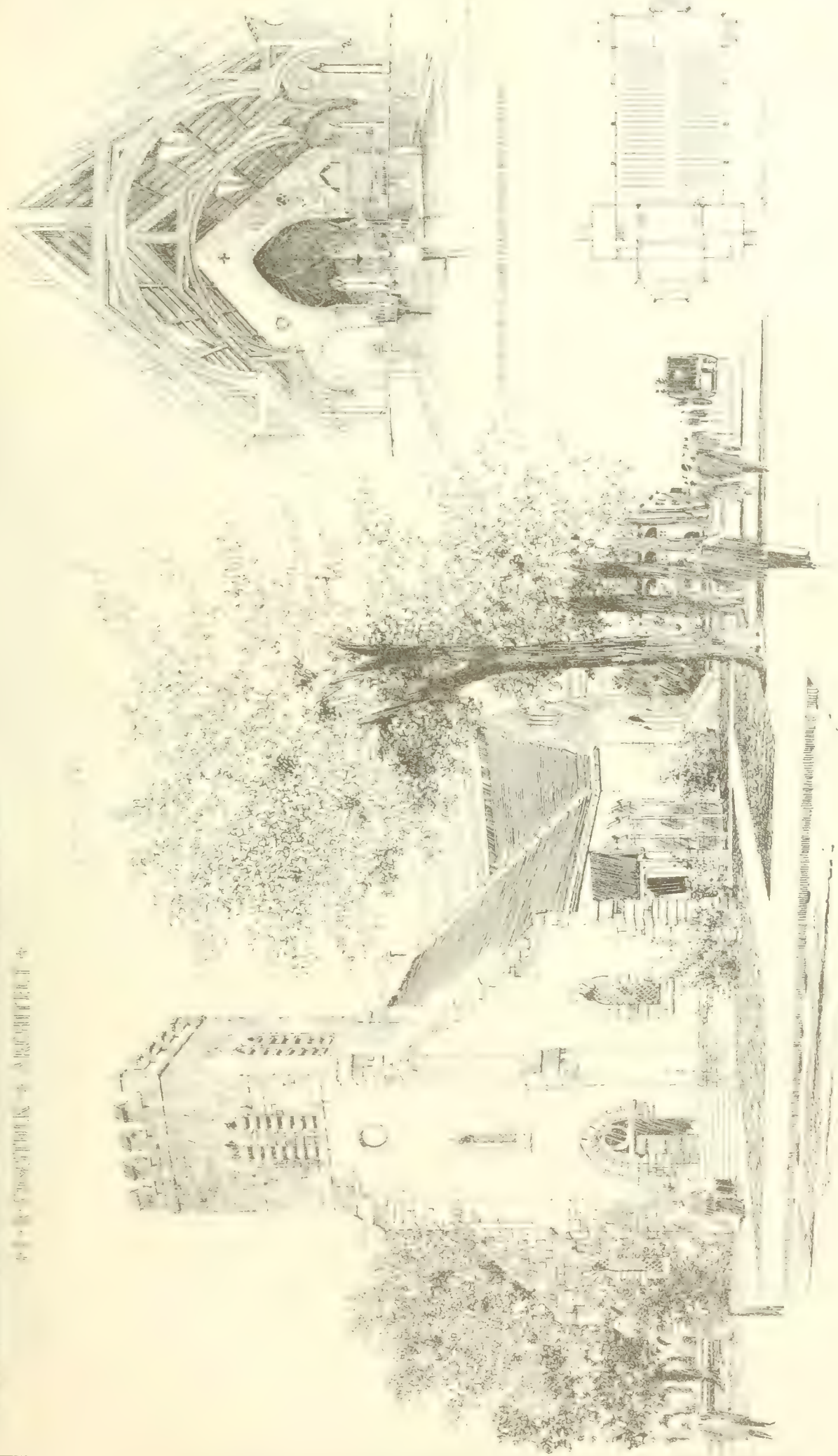
VIEW OF GARDEN FRONT

DESIGNED BY JAMES H. ANTHONY

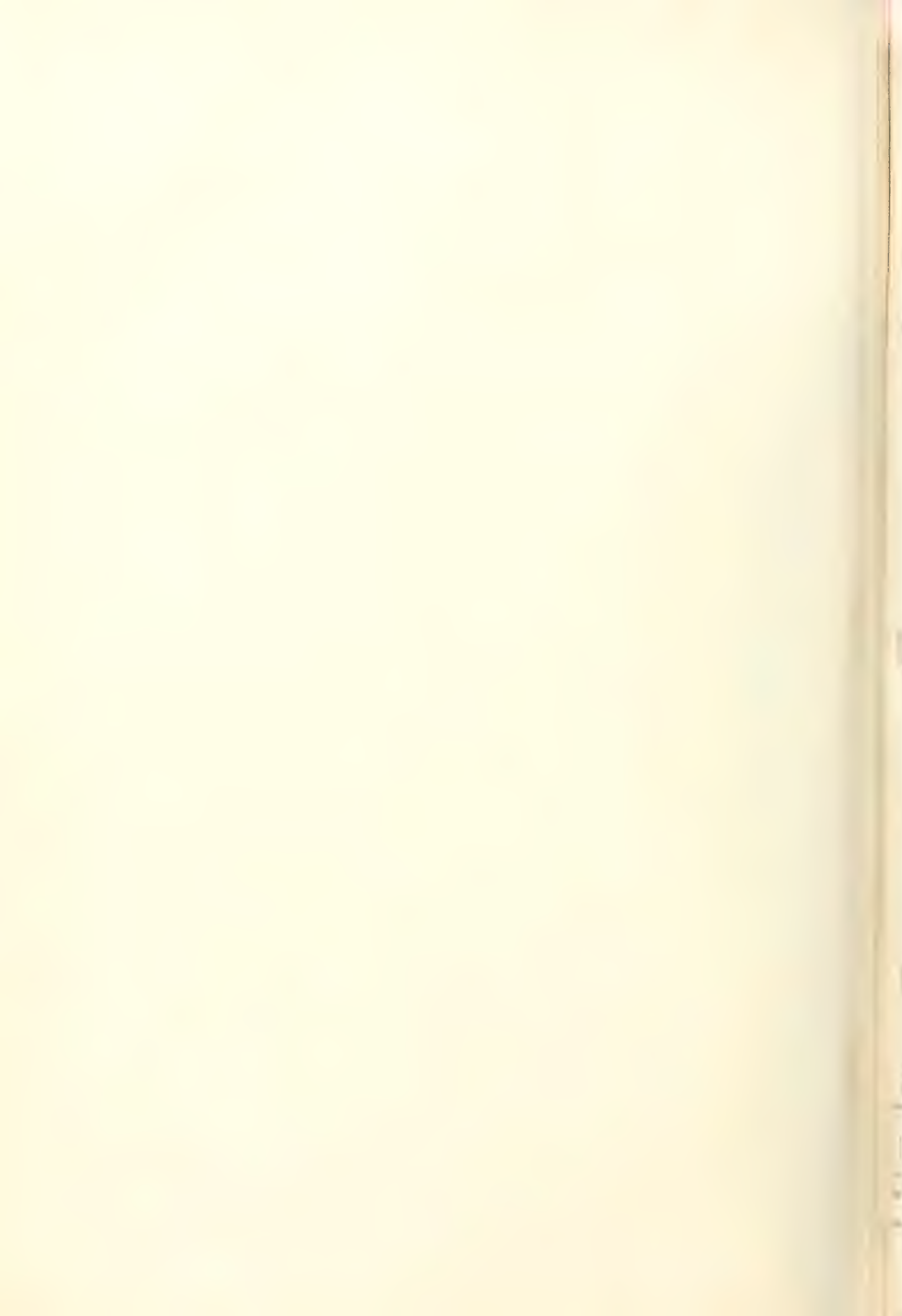


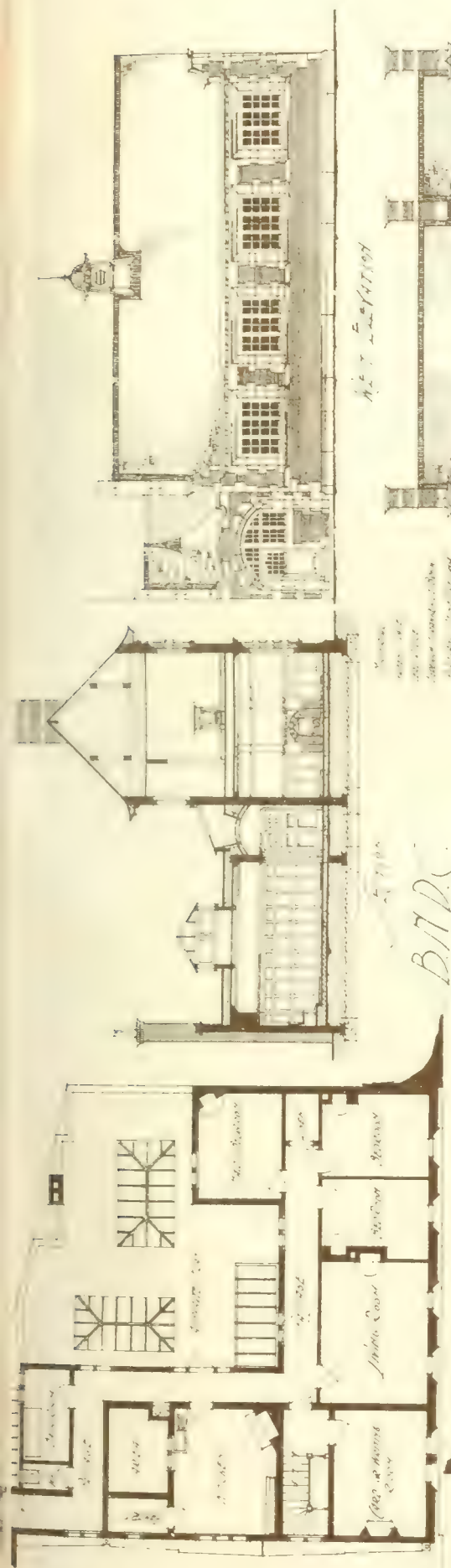
THE AMERICAN BOOK CONCERN, NEW YORK, NEW HAVEN, CONN.

NEW YORK, NEW HAVEN, CONN.

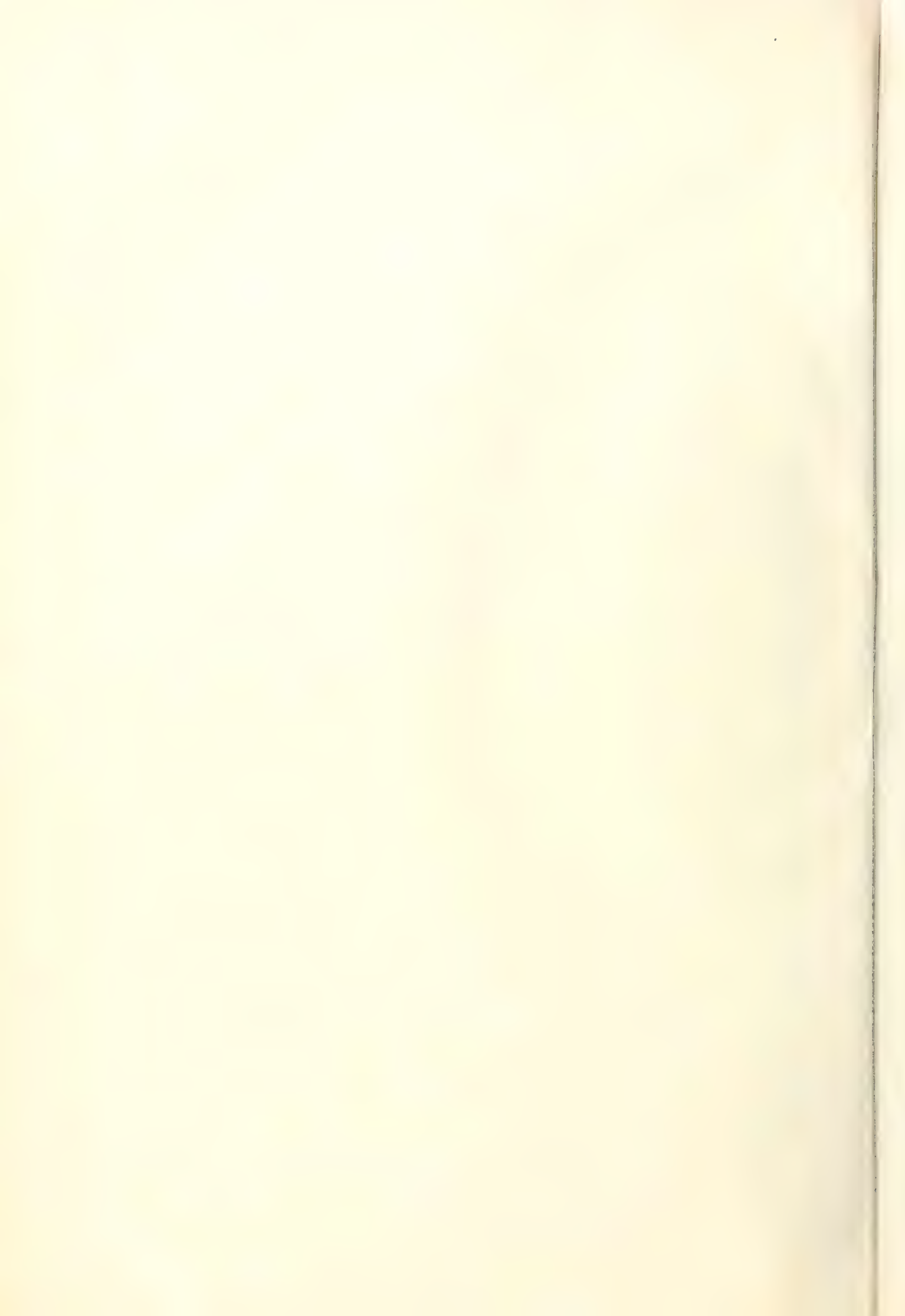


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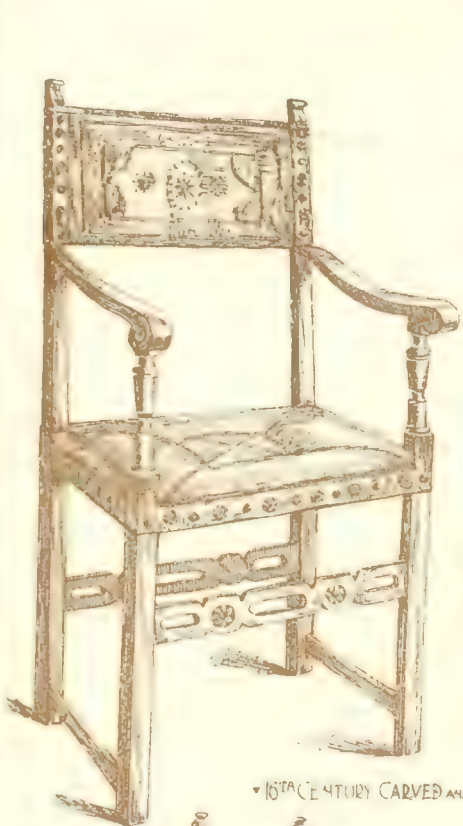




Architectural drawings of the Parochial Club, including a floor plan and elevations. The drawings are labeled with handwritten notes and titles, such as 'Parochial Club', 'First Floor Plan', and 'Second Floor Plan'. The drawings are arranged in a grid-like fashion, with the floor plan on the left and the elevations on the right.







16TH CENTURY CARVED AND TURNED CHAIR



MAHOGANY CHAIR 1710



17TH CENTY SCROLLS



CHAIR IN VESTRY OF YORK MINSTER
LATE 17TH CENT

SHEET OF CHAIRS

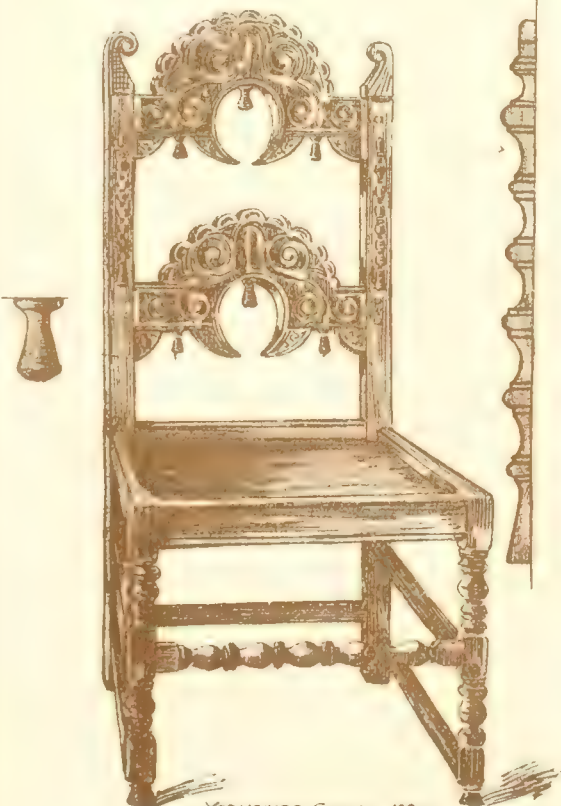
NATIONAL SILVER MEDAL
DRAWINGS
BY WILLIAM L. WHELAN



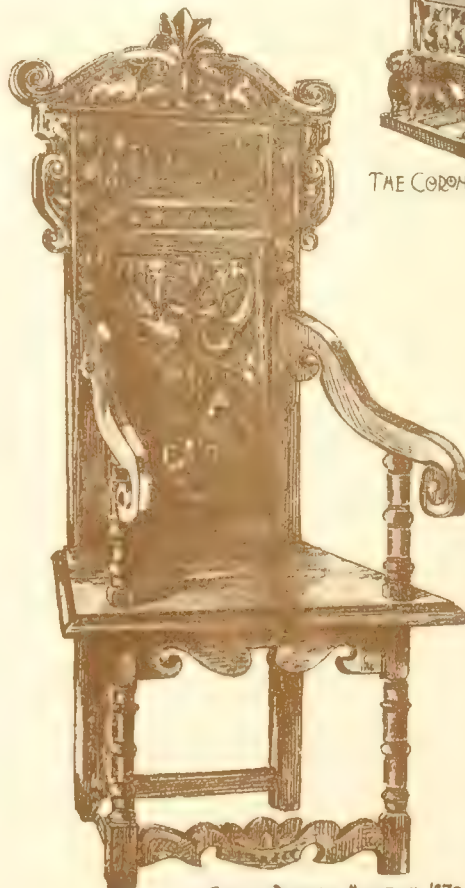
THE CORONATION CHAIR 1641



CHAIR



YORKSHIRE CHAIR 1620

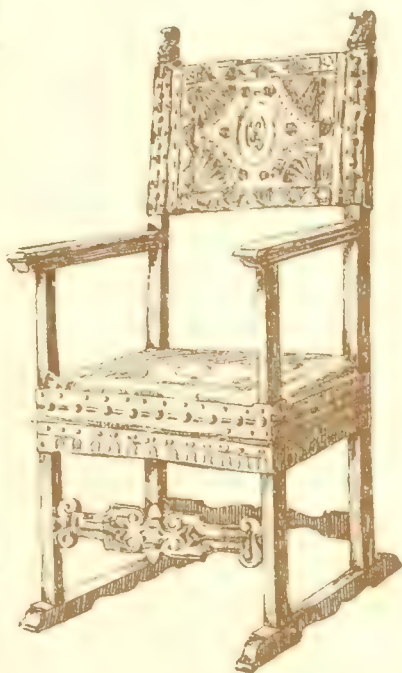


CHAIR DUBLIN MUSEUM 1670





• 16TH CENTY LEATHER BACK CHAIR •



QUEEN ANNE CHAIR



MAGISTERIAL or BISSELLUM CHAIR • DUBLIN •



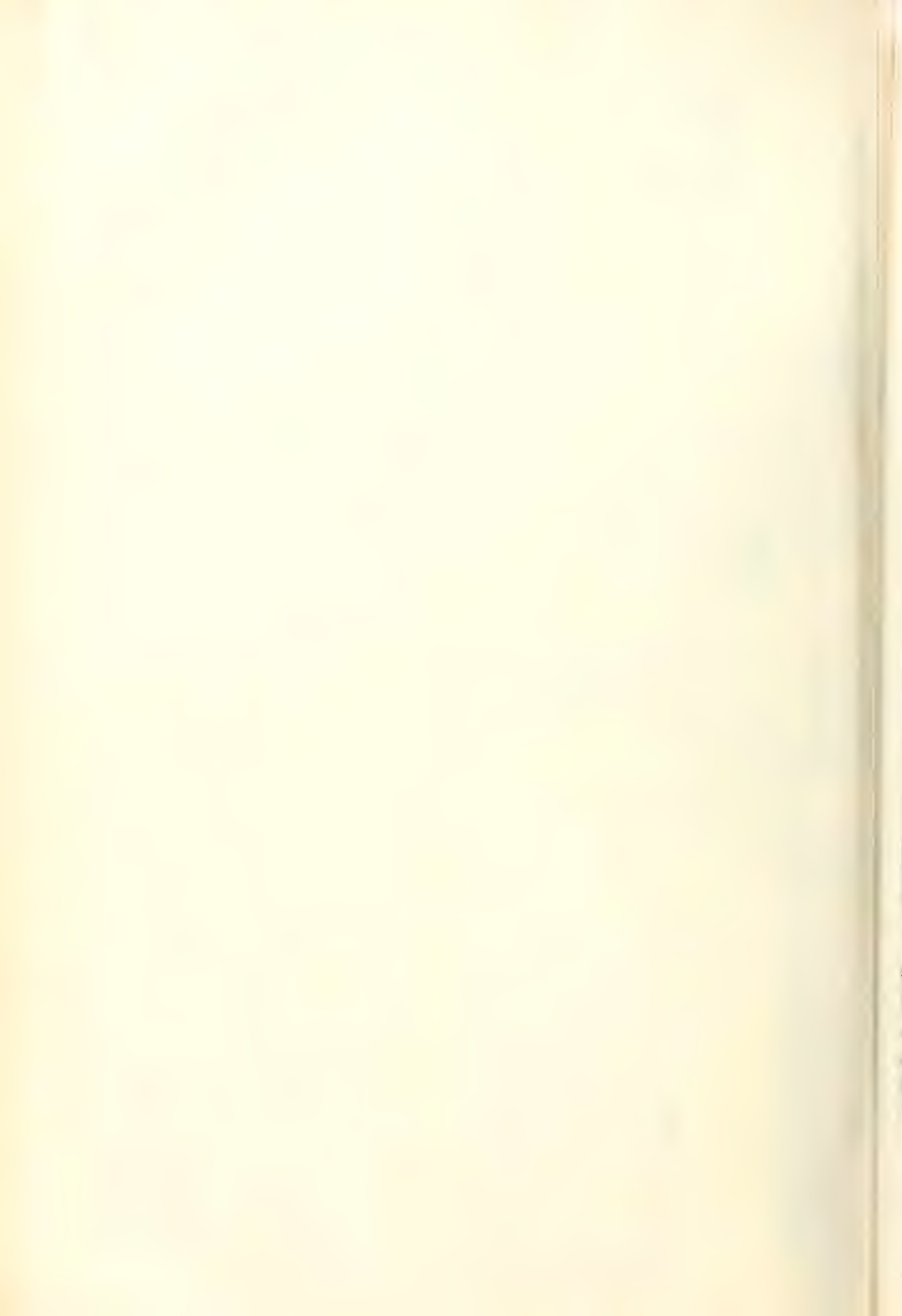
ROMAN ARM CHAIR

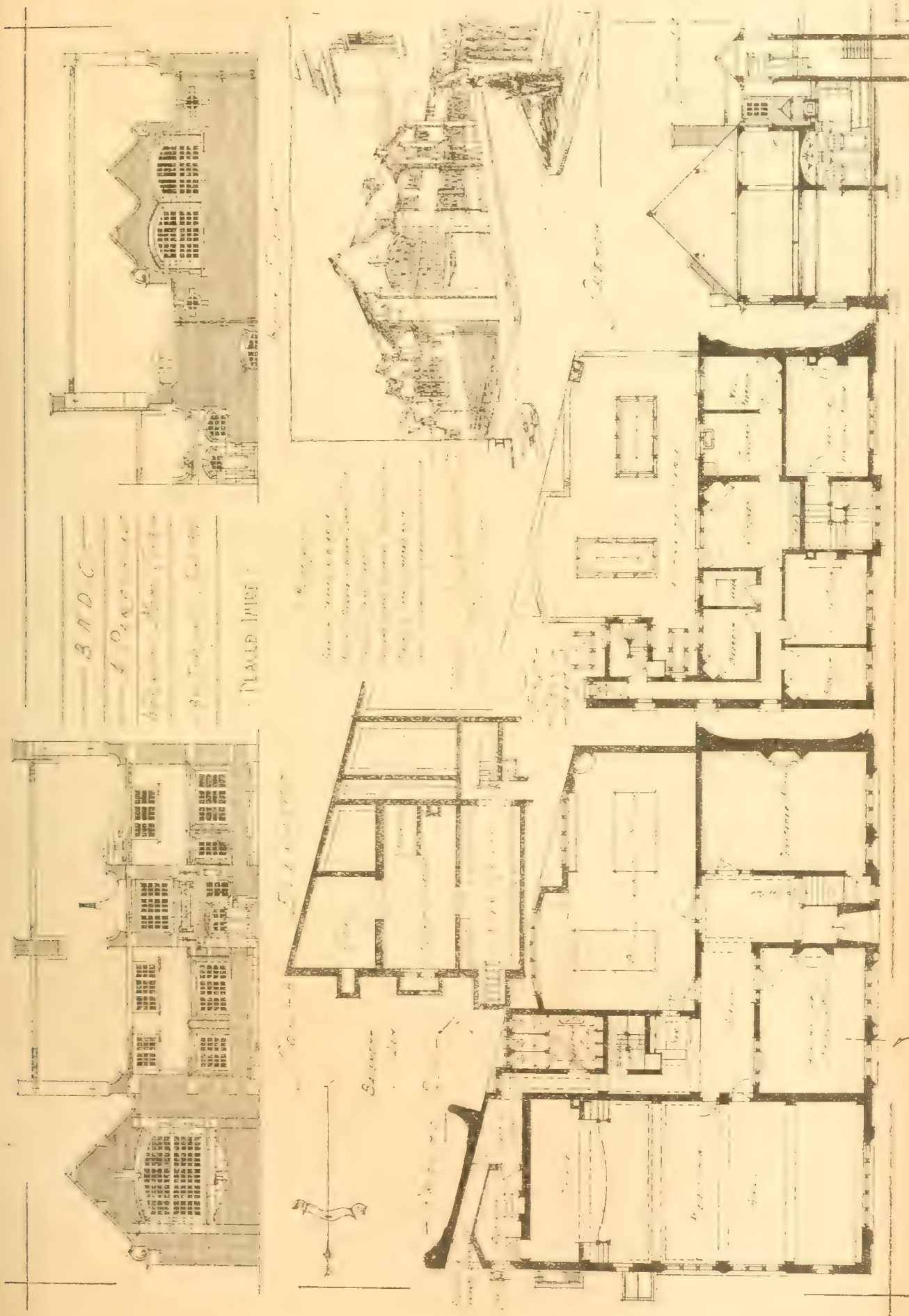


• CHAIRBACK DUBLIN MUSEUM •



SAXON CHAIR LEYCESTERS HOSPITAL WARWICK





COMPETITIONS.

SOUTH-SIDE MUNICIPAL BUILDINGS.—A special meeting of the New Municipal Buildings Committee of South Shields Corporation was held on Monday night, the Mayor presiding. The business was to consider the communication containing the assessors' awards on the 72 plans submitted by architects for the erection of the new municipal buildings on the Ogle-terrace site at a cost of about £30,000, and the disclosure of the names of the successful architects. The awards were as follows:—Mr. Ernest Fetch 1st, Mr. Rupert Savage 2nd, and Mr. Louis Ambler 3rd, all of London. The committee, having been acquainted with the names of the successful architects, passed a resolution to the effect that Mr. E. Fetch be appointed to carry out the works of the buildings subject to the approval of the town council.

CHIPS.

Birkenhead Town Council has appointed a special committee to consider the desirability of extending the boundaries of the borough. It is proposed to take in the urban districts of Lower Bebington, Port Sunlight, and Higher Bebington, and the townships of Prenton, Biston, Noctorum, Upton, and Moreton, a total area of about 600 or 700 acres.

A crisis has been reached in the Dundee building trade by the suspension of Messrs. James Morrison and Son, quarry-masters, Dantrune, Westhall, Kingrobie, and Losh Quarries, Dundee. The establishment is one of the largest of the kind in Scotland, nearly three hundred men being employed. A movement is on foot to have the quarries floated as a limited liability company. It is understood that as a going concern the assets of the firm would be considerably in excess of their liabilities.

Pending its ultimate transference to the National Portrait Gallery, the portrait of the late Sir Frank Lockwood, by Mr. Arthur Cope, A.R.A., subscribed for by members of the Bar and friends of the late eminent lawyer, has been placed in the Bauchers' Drawing-room at Lincoln's Inn.

Mr. George Calbury has conveyed to trustees an estate of 350 acres at Bournville, four miles from Birmingham, with a number of cottages already erected on it, in order to secure the provision of healthy dwellings for the working classes. The value of the gift is estimated at nearly £180,000.

A temple in a walled square was found, the other day, at Naundorf, in the Hunsrück Mountains, in Rhenish Prussia. The square is about 220ft. long by 200ft. broad, and the temple, which stands in the centre, covers an area of about 60ft. by 50ft. About 100 figures of terracotta have been found, most of them being of goddesses, with fruits or a little dog in their lap, or a child at their breast. Small bronze statues representing Mars, Jupiter, and Mercury have also been found. The temple is richer in terracotta relics than any other hitherto discovered in Germany.

By an Order in Council, the operation of the Land Transfer Act, 1897, has, as regards the City of London, been further postponed until Jan. 1, 1902.

On Wednesday in last week a very interesting ceremony took place in the Drawing Offices of the Works Department of H.M. Dockyard, Chatham, when the officers and draughtsmen bade good-bye to Mr. H. Floyd, the assistant consulting engineer, who had for the past three years been in charge of the Drawing Office. Mr. Floyd was presented with a handsome pair of binoculars, subscribed for by the heads of the department and the draughtsmen, and an autograph letter wishing him every success in his new appointment from the clerical staff. Mr. Floyd commences duties under the L.C.C. on the 25th inst.

The Milnrow Urban District Council have appointed Mr. W. H. Foster, surveyor to the Litherlands District Council, as surveyor to the council in succession to Mr. Rothwell, who has resigned. There were 48 applicants for the post.

Sir Richard Temple presided, on Saturday, at the annual meeting of the Hampstead Hospital. He announced that the council had secured a site at Hampstead Green for the proposed new hospital. Mr. Keith D. Young had been appointed architect of the building, which was to contain 50 beds, and to cost £20,000. Of this £9,000 had been paid or promised.

A memorial to the late Queen is to be placed in Hereford Cathedral which will take the form of a new west window and stained glass. The funds are being provided by the ladies of the county. The Dean and Chapter have appointed Mr. J. Oldrid Scott, their architect, to carry out the work, and it is hoped that this may prove the first step towards the complete reconstruction of Wyatt's hideous travesty of a 14th-century west front.

NOTICE.

The Editorial, Advertisement, and Publishing Offices of the BUILDING NEWS and ENGINEERING JOURNAL, are at—

**CLEMENT'S HOUSE,
CLEMENT'S INN PASSAGE, STRAND,
LONDON, W.C.,**

where all communications should be addressed.

Telegraphic Address:—"Timeservan," London.
Telephone No. 1633 Holborn.

Clement's Inn Passage is the turning west of the Law Courts, opposite St. Clement Dines Church, and our new offices can be reached in a few seconds from the Strand. They will be found on the right-hand side of the way, next door to the Vestry Hall.

TO CORRESPONDENTS.

[We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.]

It is particularly requested that all drawings and all communications respecting illustrations or literary matter should be addressed to the EDITOR of the BUILDING NEWS, Clement's House, Clement's Inn Passage, Strand, W.C., and not to members of the staff by name. Delay is not unfrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

Cheques and Post-office Orders to be made payable to THE STRAND NEWSPAPER COMPANY, LIMITED.

NOTICE.

Bound copies of Vol. LXXIX. are now ready, and should be ordered early (price 12s. each, by post 12s. 10d.), as only a limited number are done up. A few bound volumes of Vols. XXXIX., XL., XLIV., XLV., XLIX., LI., LIII., LVIII., LXI., LXII., LXIII., LXIV., LXV., LXVI., LXVII., LXVIII., LXIX., LXXI., LXXII., LXXIII., LXXIV., LXXV., LXXVI., and LXXVII. may still be obtained at the same price; all the other bound volumes are out of print. Most of the back numbers of former volumes are, however, to be had singly. Subscribers requiring any back numbers to complete volume just ended should order at once, as many of them soon run out of print.

Handsome Cloth Cases for Binding the BUILDING NEWS price 2s., post free 2s. 4d., can be obtained from any Newsagent, or from the Publisher, Clement's House, Clement's Inn-passage, Strand, London, W.C.

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Front-page Advertisements 2s. per line, and Paragraph Advertisements 1s. per line. No Front-page or Paragraph Advertisement inserted for less than 5s.

Advertisements for the current week must reach the office not later than 3 p.m. on Thursday. Front-page Advertisements and alterations in serial advertisements must reach the office by Tuesday morning to secure insertion.

SITUATIONS.

The charge for advertisements for "Situations Vacant" or "Situations Wanted" is ONE SHILLING FOR TWENTY-FOUR WORDS, and Sixpence for every eight words after. All Situation Advertisements must be prepaid.

RECEIVED.—H. W.—J. L. C.—A. F. and Co.—L. C. P.—B. W. and Son.—R. W. D.—H. G.

Correspondence.

LICHFIELD CATHEDRAL.

To the Editor of the BUILDING NEWS.

SIR,—Referring to your description in last week's BUILDING NEWS of work done at the above, stating that all the repairs had been done by Mr. Bridgeman, we beg to state that between 1877 and 1880 upwards of £10,000 worth of the work was executed by the late Mr. John Thompson, comprising the entire restoration of the stonework of the west front and its towers, the repair of the central tower and spire, the restoration of the three vestries, &c., on south side of Lady-chapel, and other smaller works.

We shall be glad if you will kindly insert this

correction in your next issue, and oblige.—We are, &c., JOHN THOMPSON AND CO., 42, Wood-street, Peterborough, March 18.

COMPETITION FOR THE HEAD OFFICES OF THE NORWICH UNION LIFE INSURANCE SOCIETY.

SIR,—In the paragraph which you inserted in your last week's issue *re* the above competition, you state that "all the competitors, and not only Mr. Mayston, received premiums." This is perfectly true; but, taken in conjunction with the paragraph in your previous week's issue, it is, perhaps, rather misleading, and does me an unintentional injustice, as my design was placed second, a special premium of £50 being awarded to me. The other competitors received £25 each.

—I am, &c., ARTHUR R. MAYSTON,
7, Great James-street, Bedford-row, W.C.
March 20.

Intercommunication.

QUESTIONS.

[11697].—**Sound Through Floors.**—I should be glad to know if any of your correspondents have found that electric light wires, telephone wires, and gas tubes in modern buildings have a tendency to cause sounds to be heard through floors to a greater extent than used to be the case. I am referring to floors consisting of 9 by 3 joists, lathed and plastered ceilings on underside, with gin boards and strips, and a 2in. layer of pugging or mortar on the top, and 1in. floor-boards nailed down on the joists.—**ENQUIRER.**

[11698].—**Height of Buildings.**—Buildings erected on roads formed or laid out before Aug. 7, 1862, can go to any height not exceeding 50ft.—as I understand. Does this apply only to the Metropolitan area, or may I take it as being applicable to the provinces? Can any of your readers kindly say? Of course, roads made after above date must not have buildings exceeding in height the width of street.—**A. M.**

REPLIES.

[11677].—**Stone for Window-Sills.**—"W. E. M." at last gives an authority for one of his several rash assertions. He says:—"A Mr. George P. Merrill, a curator in the National Museum (whether in this country or in the United States is not apparent), has asserted that the marbles of the Old World are superior to those in the New, and that, up to the moment of writing, no one has troubled to contradict this statement." Both these assertions may, or may not, be accurate, it matters very little. The mature judgment of a good all-round clerk of works, one of wide experience, or that of an intelligent foreman of masons in a large stoneyard, are opinions worth more than are those of all the curators of museums put together. "W. E. M." asserts that onyx is not onyx, but something else; but the ordinary run of readers are content to call a spade a spade.—**HARRY HEMS.**

[11696].—**Testing Portland Cement.**—Select the sample for testing from as many sacks as possible. You will thus get a better average. The amount of water required for gauging will vary according to the cement—usually from 16 to 20 per cent.; but I have known as much as 28 per cent. used. The paste should not be rammed into the moulds, but gently pressed home, care being taken that it completely fills them, and that no air bubbles are present. "Practical Man" should make six briquettes for testing, three of which should be kept in air and three in water 24 hours after mixing. The average tensile strain will depend on the quality of the cement. The finest ground cement 10 per cent. residue on 14,400 mesh per square inch) that I have seen tested, gauged neat, and immersed in water, broke with 390lb. per square inch at seven days, 490lb. at 14 days, and 540lb. at 28 days. Three days is too short a time to test. If the finest ground cement is obtained, and tested for soundness with good results, little need be feared about the tensile strain. A simple test for soundness is to mix on glass a small pat of neat cement, about 3in. diameter and 1in. thick at the centre, tapering off to a feather edge. After 24 hours set it in water, and watch the result. If it blows, reject the cement; but if it does not, it may be taken as a sound and reliable sample. Make three pats to get a good average.—**J. B. N. C.**

The City of London Corporation have raised the salary of their engineer, Mr. David J. Ross, from £900 to £1,000 a year, to date back from February, 1899.

The tender of £1,360 of H. Dorse, King-street, Cradley Heath, has been accepted for additional schools at Halesowen, Worcestershire.

The Douglas Town Council have increased the salaries of the deputy town clerk, the borough surveyor, and assistant surveyor by £25 a year each.

For the drainage of Radruth and Portreath, Mr. T. Clement Jones, C.E., engineer and surveyor to the Radruth Urban District Council, has laid before that body three schemes. The proposal recommended by the sanitary committee for adoption at an estimated cost of £4,570 proposes to carry the sewage to the sea at Portreath. The other schemes submitted were a septic tank system estimated at cost £4,204, and tunnelling to Sally Bottom at a cost of £7,913.

LEGAL INTELLIGENCE.

WHAT IS "BLUE LIAS LIME"?—MAGISTRATE'S DECISION.—The adjourned hearing of the summons issued at the instance of Alfred Andrews, of the Blue Lias Lime-Burners' Association, Medway Wharf, Grosvenor-road, Plumice, against the Cam Portland Cement Co., Limited, Meldreth, Royston, Cambridge, under the Merchandise Marks Act, was resumed before Mr. Horace Smith at the Westminster Police-court on Saturday, when the evidence was closed, the magistrate's decision being given, as stated below, on Wednesday last. The summons charged the defendants with "unlawfully and with intent to defraud applying or causing to be applied to certain goods—namely, four tons of ground hydraulic lime not being blue lias lime, a false trade description as to the place in which the said goods were produced, the mode of producing the same, and the material of which the same were composed, whereby the said goods were falsely described as being Ground Blue Lias Hydraulic Lime, contrary to the provisions of the Merchandise Marks Act, 1887." Mr. Willis, barrister, again appeared for the prosecution, and Mr. Horace Avory, K.C., defended.—Wm. Trevelyan Douglas, M.I.C.E., Victoria-street, Westminster, late consulting engineer to the corporation of Trinity House, and now architect to the Royal Lifeboat Institution, the first witness called on Saturday, said he had had constant experience of the term "blue lias lime": it denoted lime eminently hydraulic, and did not indicate either the place or origin or the particular rock from which it was derived. Some of the Cambridgeshire limes were eminently hydraulic, others were only feebly so. Witness was prepared to accept for constructional purposes any lime which satisfied the tests. The name lias was an old one, the addition "blue" quite a modern one, not known to or recognized by geologists. Witness had read the works of Sir Chas. Lyell, Sir Archibald Geikie, Dr. Davey, Sir Roderick Murchison, Dr. Jukes Brown, and Professor Sealey, and the Geological Survey of England's reports. In none of these works was the word "blue" given; but he constantly came across the name "lias lime." Witness had not used Cambridgeshire lime himself; but had seen it in use in the Eastern Counties. It was similar to Halkyn Mountain lime from Flintshire, and was properly called a blue lias lime. Cross-examined: Was not aware that lias was applied to other lime. Witness had for 25 years past expected lime from Abertaw, Rugby and Halkyn, Flintshire, as "blue lias."—Francis Hastings Medhurst, B.Sc., consulting engineer, of Victoria Chambers, Westminster, had supervised use of large quantities of so-called "blue lias lime." The only signification of the term was a good hydraulic lime fit for making concrete when mixed with gravel. The name did not refer to any locality or original stratum of rock. A geologist's definition of a material was of no interest or value to practical engineers. Witness had used to his knowledge "blue lias lime" from Cambridgeshire, and had accepted it as satisfactory. Witness always inquired of a contractor where the "lias lime" came from, and only accepted or rejected the material after submitting it to tests. Witness usually tested lime before seeing the bags in which it was delivered, showing the place of origin. Cross-examined: Witness thought as a matter of fact there were many instances of hydraulic limes derived from other sources than the liassic formation. Witness had only learned during the last eighteen months by letters in the building journals that "blue lias" did not denote the stratum from which the lime was derived, and this had induced him to give special attention to the matter. Witness had a conversation soon after the letters appeared with Messrs. Nelson's manager, who suggested that the lime from Meldreth did not come from the lias formation. Witness said he did not believe it, as it was a novel suggestion.—Christopher George Baldwin, builder and contractor, West Hampstead, of 35 years' experience, had bought thousands of tons of blue lias lime, and regarded the term as purely generic, and denoting ground poor limes, which did not evolve heat in slaking, in contradiction to rich or fat limes. It did not at all indicate the place of origin. These limes were perfectly well known to the trade, and builders depended on the analyses and tests furnished. Cross-examined: Witness chiefly bought lime from Barnston, Notts, and Normanton, near Ashby. Had never purchased the Cam Co.'s lime, but he knew the stuff well. Witness thought the geologists were all wrong, and that they should have found out that the Cambridgeshire grey lime or indurated marl was brought by the action of water from the lias formation. Witness would buy as a good lime one containing 50 per cent. of lime and 20 per cent. of silica. Re-examined: Witness had no interest in the Cam Company's works, but witness had been four or five times to the Cambridgeshire quarries, and had inspected the marl, and taken samples to be tested.—William Saight, builder, of Cambridge, employing from 150 to 200 hands, had frequently used blue lias lime. If the name of the place was not added to this in the

specification, witness sent samples of the local slow-setting Cambridgeshire limes to the architects to be tested. They always asked where it came from, and he never knew the local product to be refused on the ground of its place of origin. Cambridgeshire hydraulic limes had been known for about 16 years. Witness had purchased in 1885 and 1886 600 or 700 tons of hydraulic lime from the late Mr. Prime's works at Baddington, Cambridge, for the Cambridge cattle market. It was well known to the local architect that it came from Cambridgeshire. He also bought Messrs. Nelson's lias lime, and knew no difference between that and the local lime. Cross-examined: About half the specifications stated the name of the maker. Witness had not needed to refresh his memory as to the Cattle-market contract and the lime used, as it was the first time he used the Cambridgeshire blue lias lime. Naturally, the local lime was most used in Cambridge, as the carriage would be less. Warwickshire and Leicestershire lime were sometimes specified in Cambridgeshire.—Re-examined: Witness had used Cambridgeshire lime in Rutland, where the Leicestershire lime was cheaper.—John Jackson, of Stratford, E., contractor, said that where blue lias lime was specified without any particular place, a builder would get it from the cheapest firm that would supply the kind of lime wanted. In ordering for a job, the nearest place was selected because of the heavy cost of carriage.—James Wiggins, of Hammersmith, builder's merchant, turned over yearly 1,200 tons of the Cam Co.'s lime, besides much from many other makers. For about ten years he had bought blue lias lime of the defendants; it was supplied in bags marked "blue lias lime," and "Meldreth, Cambs," and witness sent it out to builders in the same bags. The name "blue lias" did not signify any particular place or formation, and witness would be complying with a specification by supplying it from Cambridgeshire. Witness had once a complaint from a customer that lime supplied by the defendant company was too slow-setting, but never had a suggestion that Cambridgeshire lime was not blue lias. Cross-examined: Ten years ago when witness first dealt with the defendant company, he asked for a guarantee or undertaking that the product was genuine blue lias lime—this was because the Cambridgeshire stuff was offered at a lower quotation than Nelson's and others asked. To the Magistrate: This was because we wanted to know if engineers and architects would accept the defendants' lime as coming under that definition, as the price was low. Cross-examined: The cheaper price, if quoted by any firm, would arouse witness's suspicion. Witness would not take the risk as to whether the lime was the genuine article. Re-examined: Had not known an architect or engineer object to lime because it came from Cambridgeshire.—Herbert Lawford, of the firm of Lawford and Sons, Great College-street, Camden-town, cement merchants, had purchased Cambridgeshire lime for 15 years as blue lias lime, and had sent it out in the same bags. Had never known it objected to on the ground by architects or engineers. Witness spoke to purchasing samples of cement of Messrs. Nelson and of Messrs. Greaves and Lakin, which were sent by the witness Hart with samples from the defendants' works to Mr. Dibdin for analysis. Cross-examined: Witness usually sold cement and lime in his firm's bags. Witness had no recollection of a conversation in 1893 with Mr. Blyth of Messrs. Nelson; nor of telling him that he was not putting Cambridgeshire lime on the market as blue lias.—Henry Green, builder and contractor, of Northampton, who had been an employer for 30 years, corroborated previous witnesses' statements that blue lias lime now meant merely an hydraulic lime. Witness had procured so-called blue lias lime from Cambridgeshire, but on account of the high carriage rates witness chiefly had it from Rugby.—John Inwood, in the employ of Messrs. Olney and Sons, Northampton, formally proved that a sample of cement submitted to the witness W. J. Dibdin for analysis was obtained from Messrs. Nelson. This closed the evidence, and the magistrate promised to give a written judgment on Wednesday.—The learned magistrate in giving judgment said the whole question in this case was, Were the defendant company entitled to call the lime which they manufactured "blue lias hydraulic lime"? or still more shortly, were they entitled to use the words "blue lias"? It was contended by the prosecution that the use of the words "blue lias" indicated that the lime was made from stone taken from the lias formation. On the part of the defendant company it was argued that "blue lias" was a well-known quality of lime, and had nothing to do with the lias formation. Apart from any rebutting evidence, it appeared that the contention of the prosecution was clear and simple. Lime would never have been called "blue lias lime" had it not been that it was for many years made from the lias formation. But as time went on, many persons began to make lime out of limestone which was very different from lias, and did not belong to the same formation or stratum; but the lime made from the new quarries was as good, or nearly as good, as the blue lias lime, possessing the same valuable

qualities in an almost equal degree. It became, therefore, a sort of custom to call the new lime by a name which had acquired a fame in the world, and which indicated that it was of a certain quality and fit for certain purposes. It had been admitted that the new lime could be, and was, as a matter of fact, sold for a less price than the real blue lias lime. The defendant company had for a period of ten years, or perhaps fifteen years, constantly sold their lime as "blue lias hydraulic lime." He did not think that the fact that the new lime could be sold for less than the old was conclusive for the prosecution; nor did he think that the length of time during which the defendants had sold what they called "blue lias lime" was conclusive in their favour. Nor did he think the fact that several other firms had done the same was conclusive, although these were considerations which had to be weighed on the one side or the other. But there had been brought forward a considerable body of evidence showing that merchants, architects, engineers, builders, and chemists were in the constant habit of using the term "blue lias lime" to denote a lime of a particular hydraulicity. "Hydraulic lime," it had been said, might mean lime which was scarcely hydraulic at all; but "blue lias hydraulic lime" meant "eminently hydraulic cement." That meaning had been generally attached to it, and it was asked for by that name, and accepted under that name by the general consent of merchants, architects, engineers, and builders, from whatever locality the stone was taken. Upon the whole, he found the weight of evidence as to the general use of the term as expressing quality, and its acceptance by all branches of the trade could not be resisted. He had considered the many cases where fines had been inflicted where American or Canadian hams had been described as "York" or "Bath" hams, and where English cigars had been sold as "Havannahs." It was obvious that in those cases a particular locality was fraudulently ascribed to the article sold; and if in the present case the defendants had called their lime "Warwickshire hydraulic lime" a conviction might have followed. The summons would be dismissed, but without costs. Mr. Barham, for the complainant company, said he was afraid the learned magistrate could not under the circumstances grant leave to appeal. Mr. Horace Smith said he feared he could not, as the decision turned on a question of fact; but if he should be wrong he should be glad to be set right, and if it were practicable to frame an appeal he would be happy to grant leave.

ACTION AGAINST A CHESTER ARCHITECT.—At Chester Assizes the resumed hearing took place on Thursday, Friday, and Saturday, before Mr. Justice Bruce, of an action brought by Solomon Harding, formerly accountant, of Chester, to recover damages from Charles A. Ewing, retired architect, of Chester, for alleged negligent valuation of property in Ailsa-road, Liscard. Witnesses were called for the defence, chiefly professional valuers, to show that Mr. Ewing's valuation was not an unreasonable one, and that since the time it was made—1898—the property had depreciated. The judge having to proceed to Cardiff before the case was completed, it was agreed that counsels' speeches should be heard in London, where also judgment will be delivered.

A YOUNG ARCHITECT'S CHARGES.—PARSONS V. JONES.—This case was opened on Wednesday week in the King's Bench Division, before Mr. Justice Lawrence and a special jury. Mr. Cabaté said the plaintiff was a young man who only attained his majority last year, and was an architect. Defendant was a private gentleman, and the action was brought by the plaintiff, Mr. Charles F. Parsons, to recover £120 for services rendered to Mr. Jones in the preparation of plans, &c., respecting property at Lowestoft, Walthamstow, and Stoke Newington. In May, 1898, Mr. Jones was having a bungalow erected at Lowestoft. He had had the plans prepared by a Mr. Roberts, of Lowestoft; but when it came to the building of the bungalow Mr. Jones suggested that the plaintiff, who was the son of the builder who had the contract, should make fresh plans. This was done by plaintiff, and 16 rooms were provided in place of 9, as originally intended. The plaintiff acted as his father's foreman, and it was in that way that he got the instructions. The plaintiff was subsequently employed by defendant Jones to prepare plans for a boat-house at Lowestoft. But after this was done the defendant thought he would turn the house into a hotel. The plaintiff prepared the plans, and defendant applied for the license, but failed to obtain it. When payment was asked for, the defendant suggested that all this work must be taken as part of the price paid for the buildings to the father. The plaintiff detailed the facts, alleging that on one occasion when the defendant gave him instructions, he said he would pay him well. Cross-examined: Plaintiff said he was studying architecture at a Polytechnic institute at Holloway. Mr. F. Parsons, the father of plaintiff, was called, and repeated a conversation which took place between the defendant Jones and witness's son, the plaintiff, with regard to the bungalow. The defendant gave the

Our Office Table.

The plans for the proposed memorial to the late Mr. Jones, like the rest of the Lowestoft people. Mr. Jones, the defendant, denied that he had ever employed the plaintiff as architect. He admitted to have twice over. The plans put forward by plaintiff were builder's plans, and not architect's plans, and yet the plaintiff, who was only a youth, charged much more than an experienced architect of good standing. The case was then adjourned till Thursday, when, the evidence having been concluded, Mr. Powell, counsel for the defence, said the charges made for these plans were clearly an after-thought, because the defendant had a receipt for the money paid by him for building, the receipt being given to include "all drawings, plans, &c." Mr. Cabate, in reply, said it was clear that the defendant had made himself liable, as the plaintiff stated that in every single case he got the orders to make plans express from the mouth of Mr. Jones, the defendant himself. His lordship having summed up, the jury gave a verdict for the plaintiff with £45 damages. Judgment was given for that amount with costs.

CIVIL CASES AND THE LONDON BUILDING ACT.—At North London Police-court, on Wednesday week, W. J. Bush and Co., Ltd., manufacturing chemists, of Artillery-lane, Bishopsgate, were summoned before Mr. Fordham for failing to comply with a notice to set back the external fence of a new building which they have caused to be erected in Sheep-lane, Hackney, to a distance of 20ft. from the centre of the roadway. Mr. Macmorran, K.C., appeared for the defendants. Mr. Childers, who conducted the case for the London County Council, explained that the London Building Act of 1894 and the Amending Act of 1895 required that where new buildings were erected on the site of old buildings, a plan of the old buildings should be certified by the district surveyor before the new buildings were begun. Unless such plan was certified, the buildings were to be treated as entirely new, and no part of them or the external fence could be erected within 20ft. of the centre of the roadway. In the present instance the defendants were the owners of property on the east side of Sheep-lane, a very narrow thoroughfare. A number of old cottages on this land were pulled down, and on July 13 last the builder, Mr. Nightingale, gave notice of the erection of a new factory and stables. On July 25 the surveyor to the Hackney Vestry called the attention of the London County Council to the fact that the buildings were in course of erection. On August 1 the Council caused a survey to be made, and it was then found that the buildings had been begun. On August 25 Mr. Hamilton, the defendants' architect, submitted to the district surveyor a plan of the old buildings, and the district surveyor certified the line of the old fence. The case for the Council was that this plan was too late, and being late, the building came within section 13, subsection 1, of the Building Act. Section 200, subsection 2, fixed the penalty at no less than 40s. or more than £5. Mr. Macmorran, K.C., said that it was a purely technical offence; the plan was late and the defendants admitted it, but the point was whether it was absolutely necessary for the certified plan to be sent in before the building was begun. Mr. Fordham said that he should find that the plan which had been certified by the district surveyor was sufficient to comply with the Act, but it was not submitted in time, as the Act contemplated the production of the plan before any new building was begun. He must therefore convict. He fined the defendants £3 3s. with £2 2s. costs, but he would, if asked to do so, state a case for the opinion of the superior Court.

MALMESBURY WATERWORKS ARBITRATION.—Sir J. Whittaker Ellis, Bart., sat as umpire in an arbitration case at Malmesbury, for the purpose of determining the price which should be paid by the town council for the undertaking of local waterworks company. The arbitrators appointed were for the company Mr. John H. Fielder, of the firm of Messrs. Dore, Fielder, and Matthews; and for the town council Mr. J. W. Restler, M.Inst.C.E., chief engineer to the Vauxhall and Southwark Waterworks Company. Mr. Fielder contended that the company were entitled to 33½ years' purchase of the net annual profits during the last three years—£11,793. But inasmuch as the company did not possess any statutory powers, he deducted from that sum the probable cost of an unopposed Act of Parliament, say £700, and that brought his valuation to £11,092. Mr. Restler, basing his valuation on the present worth of the plant as a going concern, arrived at a total of £4,664 5s., original value, and, allowing for depreciation, he found the present value to be £3,743 10s. Sir John W. Ellis said he did not think 33½ years' purchase was applicable; but, on the other hand, it must not be forgotten the corporation were buying a business, and not merely a plant. He reserved his award.

Mr. Richard Hack, M.I.C.E., engineer to the Chelsea Waterworks Co., died on Sunday at Wotton, after a long illness, aged 77 years.

The scheme for adding a Campo-Santo to Westminster Abbey as a national memorial to the late Mr. Jones has been finally killed by the decision of the revision committee, made public on Wednesday, that the most fitting site for the monument should be the brick open space in front of Parkington Palace, and that a statue of the late Mr. Jones should form the principal feature of the design. At the public meeting, to be held next Tuesday afternoon at the Mansion House, further details will doubtless be decided upon, and, provided the appeal to the generosity of the nation is adequately responded to, a great opportunity will be presented to our architects and sculptors.

From a statement made at the last meeting of the Court of Common Council, it appears that Mr. Edward W. Mountford's designs and plans for the rebuilding of the Old Bailey Sessions House, selected in competition nine months since (and illustrated, it will be remembered, in the Building News for June 29, July 13, and 20 last year) have been approved by all the authorities interested. Mr. Mountford is now proceeding with the working drawings; but Newgate Prison is hardly likely to be formally transferred from the custody of the Home Secretary to the City Corporation until June 24, 1902, owing to the time necessary for the enlargement of Brixton Prison. Should possession of Newgate be given before that date, the City Lands Committee will be quite ready to start the work of rebuilding the Sessions House.

The London County Council Sites Value Bill, introduced on Tuesday by Mr. Buxton, provides for the separate valuation of land as distinct from the building, and the assessment of the land values for local rates, each interest in the land paying its fair share of the rate placed upon it. The rate proposed is 2s. in the pound on each site value. The rate is to be collected from the occupier, and he will be entitled to deduct from the next rent he pays an amount equivalent to his payment of such rate, less any part of it for which he himself is liable. This will be shown on the demand note. The person receiving the rent from the occupier is (unless he be the freeholder) in the same way to deduct from his next payment of rent the amount deducted in respect of such rate, except such proportion for which he is shown to be liable. Every assessment committee is to appoint a site valuer to make a valuation of the site value of each hereditament, and to proportion such valuation amongst the various persons having interests in the hereditament. Notices and forms are to be served on the occupier, requiring him to make returns as to his own interest in the land, and to send on to the person to whom he pays rent similar forms and notices, such person being required in turn to send on forms and notices to the person to whom he pays rent, and so on. One of the objects of the Bill is to utilise as far as possible the existing rating machinery for the purposes of the site value rate. Unlet building land is also to be assessed.

The extensions to the Grimsby Workhouse Infirmary are being warmed and ventilated by means of Shorland's patent Manchester stoves with descending smoke flues, patent Manchester grates, and Shorland's inlet and outlet ventilating panels, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

Lord Lonsdale is taking in hand at Workington an important project. This is the making of a new channel from Lonsdale Dock about 1,000 yards in length out to sea. Its depth will be 4ft. below the present dock sill. Dredging will start forthwith in the old channel so as to give greater depth of water for steamers entering the river. The probable cost of the entire work is £10,000. Tenders are being advertised for.

One of the first memorial windows of the late Queen Victoria is that designed for St. Peter's Church, Streatham. It contains three figures representing Self-Knowledge, Self-Reverence, and Self-Control, surmounting a bust of the Queen. The artist is Mr. G. V. Ostrahan.

The second annual dinner of the Norwich Master Builders' Association was held on Thursday in last week at the Royal Hotel, in that city, where a company to the number of about 90 sat down. Mr. Hawes occupied the chair in his capacity of president of the association.

MEETINGS FOR THE ENSUING WEEK.

Monday.—Society of Arts. "Electric Railways," Cantor Lecture No. 3, by Major P. Cardew 8 p.m.

Tuesday.—Society of Arts. "The Commonwealth of Australia," by Sir J. Alexander Cockburn, K.C.M.G. 4.30 p.m.

Institution of Civil Engineers. Discussion on "The Aesthetic Treatment of Bridge Structures," paper on "The Burston Work for Plymouth Water Supply," by E. Sandeman. 8 p.m.

Wednesday.—Society of Arts. "Clocks, Carillons, and Bells," by A. A. Johnston. 8 p.m.

Thursday.—Society of Arts. "The Greek Retreat from India," by Sir T. Hungerford Holdich, K.C.I.E., C.B. 4.30 p.m.

Friday.—Architectural Association. "Small Suburban Houses," by H. D. Searles-Wood and H. R. Appelbee. 7.30 p.m.

THE ARCHITECTURAL ASSOCIATION.

THE ASSOCIATION'S ANNUAL GENERAL MEETING will be held at the Royal Albert Hall, on Friday, March 23, at 8 p.m. The subject of the evening will be "The Small Suburban House," by H. D. Searles-Wood and H. R. Appelbee. The meeting will be held in the presence of the President, Mr. J. C. Traill, and the Vice-President, Mr. J. C. Traill. The meeting will be held in the presence of the President, Mr. J. C. Traill, and the Vice-President, Mr. J. C. Traill. The meeting will be held in the presence of the President, Mr. J. C. Traill, and the Vice-President, Mr. J. C. Traill.

G. E. CARVILL, Hon. Secs.
F. S. BALFOUR

CHIPS.

The sewage committee of Glasgow Corporation have considered a report by their engineers regarding the proposal to widen the Clyde at Dalmuir by cutting off a strip of land at the new sewage works. The report has been remitted to a sub-committee, who have been instructed to endeavour to arrange matters with the Clyde Trustees.

The new works to be carried out at Dover by the Harbour Board will, according to the Parliamentary estimate, cost £1,207,308. The marine station and covered pier for the use of the mail packets will cost £755,425, the viaduct and connection of the Prince of Wales' Pier with the railway system and seven new railway lines to the marine station will cost £187,817, the new lock £147,950, and the improved outer harbour £116,116.

Morrison's Hotel, one of the old landmarks of Dublin, is being razed to the ground to afford a site for offices for an insurance company. It was famous as Parnell's resort. It was originally one of the town houses of the Fitzgerald family, who owned a great deal of property in the vicinity. Over the door of the hotel at the present day are the Fitzgerald arms, and in the supporters are prominent the figures of two monkeys.

The trade at the Estate Market last week chiefly consisted of small holdings at the East-end. A few ground-rents went at 27 years' purchase, but a larger portion was passed. The week's total was £55,000, mainly the proceeds of the sale of small investments.

A Baptist church has just been erected at Cradley, Worcestershire, at a cost of £3,700, by Mr. H. Dorset, builder, King-street, Cradley Heath, Staffs, from designs by Mr. A. Butler, of High-street, Cradley Heath. On Saturday evening last the workmen who have been employed on the works were entertained by the building committee to a coffee supper in the church parlour.

The Roman Catholic Church of St. Bonaventure's, Bishopston, was opened on Friday. The architects were Messrs. Pugin and Pugin, of Westminster, and the builders Messrs. Wilkins and Sons, of Bristol. The outlay has been £4,000.

The restoration of the parish church of Wansford, near Peterborough, is about to be undertaken. The architect is Mr. J. C. Traylen, of Stamford, who estimates that about £1,500 will be required to build a new chancel, vestry, organ-loft, underpin the tower, and provide a new roof for the nave. Of this sum, all but £250 has been subscribed.

Replying to a question in the House of Commons on Monday, Mr. Akers Douglas stated that the work of widening Piccadilly will be begun by the London County Council about the end of the summer.

The Emperor William on Tuesday received Herr Ehardt, the architect, in order to inspect the plans and models for the restoration of the "Hochkönigsburg" near Schlettstadt, in Alsace, for which the necessary funds have just been granted by the Reichstag and the Alsace-Lorraine Diet.

The death occurred on Tuesday week at his residence, Glanraon, Bangor, of Mr. Evan Williams, a leading Bangor builder, who in his time has been responsible for the erection of some of the principal educational and other buildings in Bangor. In former years Mr. Williams, who was a member of the first city council, took a very prominent part in Freemasonry. He leaves a widow and several children.

Trade News.

WAGES MOVEMENTS.

THE SMILING LABOUR MARKET.—The Labour Department reports that the state of employment during February showed but little change when compared with the previous month, but was worse than a year ago. A considerable fall of wages has been reported during the month, mainly in the mining and iron and steel industries of Scotland and the North of England. In the 143 trade unions making returns, with an aggregate membership of 543,487, 21,159 (or 3.9 per cent.) were reported as unemployed at the end of February, compared with 4 per cent. in December, 1900, and January, 1901, and with 2.9 per cent. for February, 1900. Employment in all branches of the building trades has continued to decline. The percentage of unemployed union members among carpenters and plumbers at the end of February was 5.2, compared with 4.7 per cent. in January. The percentage for February, 1900, was 3.1. In the furnishing trades employment has slightly improved. The percentage of unemployed union members at the end of February was 6.4, compared with 7.8 in January and 6.9 per cent. in February of last year. Twenty-five disputes began in February, 1901, involving 6,046 workpeople, of whom 4,287 were directly, and 1,758 indirectly, affected. Of these new disputes two occurred in the building trades. Of the 29 new and old disputes, involving 7,627 workpeople, of which the termination is reported, 11, involving 3,366 persons, were decided in favour of the workpeople. 12, involving 2,641 persons, in favour of the employers, and four, involving 811 persons, were compromised. The changes in rates of wages reported during February affected 220,203 workpeople, and their net effect on the weekly wages of these workpeople was a reduction of 2s. 0½d. per head.

RENTAL AND LEASE.—A largely attended meeting of the members of the Joiners' Society was held on Friday night to consider the proposed reduction in wages, and alterations in the working rules and regulations. It was unanimously resolved that the proposed alterations should be strenuously resisted, as some large centres had maintained the present rate of wages. The men, at

the same time, agreed to meet the employers in conference at any time. It is proposed to reduce the wages from 9s. to 8s. per hour.

The partnership heretofore subsisting between James Cubitt and G. F. Collinson as architects at Broad-street Buildings, E.C., under the style of Cubitt and Collinson, has been dissolved.

Messrs. Andrew and Butterworth, of Manchester, have been appointed architects for the new hospital at Wardle, to be built at an estimated outlay of £10,000.

At Monday's meeting of the Glasgow town council, the Watching Committee submitted sketch plans for halls, library, and police station for Kingston Ward at a cost of £15,800, and recommended that, subject to the approval of the Libraries Committee, it be remitted to the city engineer to prepare and submit detailed plans and elevations. The recommendation was adopted.

The Waterworks Committee of the Leeds Corporation were informed at the last meeting that the fourth 30in. main from the Swinasty Reservoir, in the Washburn Valley, to Eccup, was completed from Arthington to the village of Leathley, and that the 18in. pumping main from Headingley pumping-station to Bramley was completed from the pumping-station to Kirkstall.

A general assembly of the Royal Scottish Academy was held on Wednesday, when the following were elected Associates:—R. Gammell Hutchison, E. A. Hornel, and William Walls. There were three lady candidates, but their claims were not considered.

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LIST OF COMPETITIONS OPEN.

Nottingham. Sewage Scheme for the Parishes of Colwick & Lutterworth	C. J. Spencer, Clerk, Public Offices, Basford, Nottingham	Mar. 25
Nottingham. Public Library, North. (Inst. 29-00)	W. H. Hopkinson, A.M.I.C.E., Borough Engineer, Town Hall, Keighley	April 30
London. Alterations, &c., to District Lunatic Asylum (Inmate's Irish Architects)	John Enright, Clerk, Home District Lunatic Asylum, Co. Clare	June 10
Melton Constable. Mission Church (3 plans)	The Rector, Melton Constable, Norfolk	—
London. Monument Clock-Tower on the Strand	C. S. Wollen and S. Bullard, Hon. Secs., 1, Lower-terrace, Tottenham	—
Barkgate, Darlington. Row of Shops and Houses	H. G. Stevenson, Town Clerk, Darlington	—

LIST OF TENDERS OPEN.

BUILDINGS.

Chard. Alterations and Additions to Furnham Schools	Rev. Father Elvington	Mar. 23
Amble. Six Houses, Ashington-road	William Gibson, Green-street, Amble	" 23
Salford. Repairing Workhouse Chimney Stacks	F. Townsend, Clerk, Union Offices, Eccles New-road, Salford	" 23
London. Alterations, &c., to District Lunatic Asylum (Inmate's Irish Architects)	J. and R. S. Ingram, Architects, 116, King-street, Kilmarnock	" 23
Ogmore Vale. Altering, &c., Craigrhwylyn Schools	James Jones, Architect, Pen-y-rhonda	" 23
Ashby-de-la-Zouch. Girls' School and Head Mistress's House	Barrowcliff and Allcock, Architects, Loughborough	" 23
London. Western Day School	Sampson Hill, Architect, Green-lane, Redruth	" 23
Chard. Alterations and Additions to Buildings, Cornhill	A. W. Yeomans, M.S.A., Architect, Chard, Somerset	" 23
Ilkley. Six Houses	E. Jones, Architect, Port	" 23
Byfleet. Five and Five-Bungalows, Station	Crockett & Burns, Lock, 24, Grange-street, West, Newcastle-upon-Tyne	" 23
South Shields. Retort House, &c.	The Engineer's Office, Gasworks, South Shields	" 23
Cranham. House Restoration	Charles C. Doig, Architect, 147, High-street, Elgin	" 23
Norton Lees. School	J. Norton, Architect, Alliance Chambers, George-street, Sheffield	" 25
Barnes. N. Chimney-Stack, Tottenham-lane	E. J. W. Rogers, Surveyor, Southwood-lane, Highgate-lane, N.	" 25
Bradford. New Roof to Weaving Shed, Holme Top Mills	R. W. C. Atkinson, Architect, 1, Ivegate, Bradford	" 25
Carnarvon. Semi-Detached Villas	R. L. Jones, Architect, 14, Market-street, Carnarvon	" 25
Leeds. Variant Works, Beck-street	Thomas Wain and Sons, Architects, 92, Albion-street, Leeds	" 25
Yarmouth. Two Cottages, Railway Estate	Bois and Son, Surveyors, Princess Chambers, Plymouth	" 25
Yland. Public Baths, South House Estate	George Herworth, Architect, 29, Brighthelm-road, Brighton	" 25
Colchester. Seven Cottages, Coventry-road	Tom Dale, Secretary, Coventry-road, Colchester, Birmingham	" 25
Blyth. New Houses, Bridge-street	J. Goulding, jun., Architect, Blyth	" 25
Newport, Mon. Power-House Foundations	F. H. Haynes, Borough Engineer, Newport, Mon.	" 26
Ditchampton. Cottage at Pumping Station	H. J. King, Town Clerk, Municipal Offices, Russell-st., Wilton	" 26
Mount Bellew. Workhouse Improvements	J. Smith, Architect, Ballinasloe, Ireland	" 26
Bala and Dolgelly. Two Cottages at Level Crossings	G. K. Mills, Secretary, Paddington Station, W.	" 26
Thorner. Two Semi-Detached Houses	Henry Walker, Architect, Upper Mount-street, Leeds	" 26
Cherry Tree. Five Bungalows, Gals Wapentake	The Engineer's Office, Hunt's Bank, Man-baker	" 26
Boothby, Lincs. Pair Labourers' Cottages	W. Mortimer and Son, Architects, Lincoln	" 26
Hull. Public House, Engine-Shop	Wm. Bell, Architect, York	" 27
Arrowthwaite, Cumberland. Two Houses	J. S. Moffat, M.S.A., 53, Church-street, Whitehaven	" 27
Durham. Yorks. Three Villas	Garth and Pennington, Architects, York	" 27
Whitley. Rebuilding Briar Dene Hotel	Joseph Potts and Son, Architects, 57, John-street, Sunderland	" 27
Dublin. New Buildings at Workhouse	M. J. Morris, Clerk of Works, North Brunswick-street, Dublin	" 27
Leeds. Suburban	Milnes and France, Architects, Swan-arcade, Bradford	" 27
Aboyne. Additions to Public School	Jenkins and Marr, Architects, 16, Bridge-street, Aberdeen	" 27
Castelford. Rebuilding Shops, Bridge-street	Garde and Pennington, Architects, 1, Castleford	" 27
Bolton. Bakery, &c., Lever-street	T. G. Lumb, Architect, 28, Birley-street, Blackpool	" 27
Ferndale. Additions to Premises	Jas. J. Jenkins, Secretary, Ferndale	" 27
Bishop Auckland. Permanent Way Shops	Wm. Bell, Architect, Central Station, Newcastle	" 27
Catgate. Cementing Teacher's Residence	Thos. Wilson, Architect, 121, Durham-road, Blackhill	" 27
Purston, Yorks. Two Villas	Garth and Pennington, Architects, York	" 27
Castelford. Three Shops, Bridge-street	Arthur Hartley, Architect, County Chambers, Castleford	" 27

BUILDINGS—continued.

Ennis, P. & Son, 1, P. ...	Walter D. Gill, Architect, 2, Summerville-terrace, Stanningley ...	Mar. 26
Hampstead N.W. Swimming-Pool, Hampstead-road ...	C. H. Lowe, M.I.C.E., Surveyor, Town Hall, Hampstead ...	28
Barry, J. & Son, 1, ...	H. Snell, Architect, 6, Stanwell-road, Penarth ...	28
U.K. M. S. ...	B. Lawrence and Son, Architects, Newport, Mon. ...	28
Leicester, Small, H. K., Chambers ...	C. J. Slade, Engineer, Millway-road, Andover ...	28
H. K. M. S. ...	Robert Hammond, M.I.C.E., 64, Victoria-street, Westminster ...	28
Leicester, J. & Son, ...	J. Llewellyn Smith and Davies, Architects, Aberdare ...	28
Leicester, J. & Son, ...	J. H. May, Quantity Surveyor, 249, High Holborn, W.C. ...	29
Leicester, J. & Son, ...	A. E. White, City Engineer, Town Hall, Hull ...	29
Leicester, J. & Son, ...	Sydney G. Goss, 3, Broad-street Buildings, E.C. ...	30
Leicester, J. & Son, ...	George Rosser, Architect, Risca ...	30
Leicester, J. & Son, ...	J. B. Fenwick, Gas and Water Engineer, Retford ...	30
Leicester, J. & Son, ...	F. J. C. May, Borough Engineer, Town Hall, Brighton ...	30
Leicester, J. & Son, ...	John Russell, Architect, 22, Waring-street, Belfast ...	30
Leicester, J. & Son, ...	Samuel Sagar, F.I.A.S., Architect, Newton Abbot ...	30
Leicester, J. & Son, ...	W. E. Milton, Clerk, Chew Magna ...	30
Leicester, J. & Son, ...	The Rev. J. Coulter, Methodist Manse, Newtownbutler ...	30
Leicester, J. & Son, ...	The Chairman, Board of Guardians, Armagh ...	April 1
Leicester, J. & Son, ...	H. Beswick, County Architect, Newgate-street, Chester ...	1
Leicester, J. & Son, ...	H. B. Longley, Engineer, Council Offices, Moss Side, Manchester ...	1
Leicester, J. & Son, ...	J. Whiteley, Secretary, Threlkeld ...	1
Leicester, J. & Son, ...	B. Jacobs, Archt., Lincoln's Inn Buildings, Bowalley-lane, Hull ...	1
Leicester, J. & Son, ...	G. E. Beaumont, Engineer, Greenide, near Sheffield ...	2
Leicester, J. & Son, ...	John Harding and Son, Architects, 59, High-street, Salisbury ...	2
Leicester, J. & Son, ...	W. E. R. Allen, Deputy Clerk, Westgate-street, Cardiff ...	3
Leicester, J. & Son, ...	W. E. R. Allen, Deputy Clerk, Westgate-street, Cardiff ...	3
Leicester, J. & Son, ...	John Thomas, Clerk, Brynmawr, Breconshire ...	3
Leicester, J. & Son, ...	W. E. R. Allen, Deputy Clerk, Westgate-street, Cardiff ...	3
Leicester, J. & Son, ...	Thos. Longdon, Borough Engineer, Town Hall, Warrington ...	3
Leicester, J. & Son, ...	W. E. R. Allen, Deputy Clerk, Westgate-street, Cardiff ...	3
Leicester, J. & Son, ...	William Eccles, Clerk, Town Hall, Coleraine ...	4
Leicester, J. & Son, ...	Thomas Reid, Architect, Conster Manor House, Brede, Sussex ...	10
Leicester, J. & Son, ...	J. P. Muspratt, Clerk, County Office, Preston ...	10
Leicester, J. & Son, ...	Frank Whitmore, Architect, Chelmsford ...	10
Leicester, J. & Son, ...	J. P. Muspratt, Clerk, County Office, Preston ...	10
Leicester, J. & Son, ...	Byfield and Son, Solicitors, 3, Stone Buildings, Lincoln's Inn, W.C. ...	11
Leicester, J. & Son, ...	J. P. Davies, Eureka-place, Ebbw Vale ...	12
Leicester, J. & Son, ...	Jacob Rees, Architect, Hillside Cottage, Pentre ...	15
Leicester, J. & Son, ...	E. A. Johnson, F.R.I.B.A., Merthyr ...	20
Leicester, J. & Son, ...	J. Somes Story, County Sur., County Offices, St. Mary's Gate, Derby ...	24
Leicester, J. & Son, ...	J. W. Moncur, Borough Surveyor, Town Hall, Sunderland ...	25
Leicester, J. & Son, ...	Joseph Carr, Secretary, 41, Mosley-street, Newcastle-on-Tyne ...	—
Leicester, J. & Son, ...	J. Hilton, Architect, 36, Cleary-street, Oldham ...	—
Leicester, J. & Son, ...	Jno. Robinson, Surveyor, Wombwell, Yorks ...	—
Leicester, J. & Son, ...	Percy B. Houghton, Architect, Farnival Chambers, Chesterfield ...	—
Leicester, J. & Son, ...	Garside and Pennington, Architects, Castleford ...	—
Leicester, J. & Son, ...	Bland and Bown, Architects, Harrogate ...	—
Leicester, J. & Son, ...	S. Rooney, 9, Quay-street, Cardiff ...	—
Leicester, J. & Son, ...	George Waller, Architect, Middlegate-street, Great Yarmouth ...	—
Leicester, J. & Son, ...	A. A. Algeo, Manorhamilton, Ireland ...	—
Leicester, J. & Son, ...	J. S. Moffat, M.S.A., Architect, 53, Church-street, Whitehaven ...	—
Leicester, J. & Son, ...	Oliver and Dodgshun, F.F.R.I.B.A., Architects, Carlisle ...	—
Leicester, J. & Son, ...	T. Ernest Crossling, Architect, Front-street, Stanley, Durham ...	—
Leicester, J. & Son, ...	J. E. Preston, Architect, 8, Allerton-terrace, Chapel-Allerton ...	—
Leicester, J. & Son, ...	T. Brownlow Thompson, 15, Parliament-street, Hull ...	—
Leicester, J. & Son, ...	Williamson and Inglis, Architects, Kirkcaldy ...	—
Leicester, J. & Son, ...	E. R. Ridgway, M.S.I., Architect, Long Eaton ...	—
Leicester, J. & Son, ...	J. W. Godderidge, Architect, 4, Bolebridge-street, Tamworth ...	—
Leicester, J. & Son, ...	John Hutton, M.S.I., Architect, Kendal ...	—
Leicester, J. & Son, ...	Cackett & Burns Dick, Architects, 24, Grainger-st., Newcastle-on-T. ...	—
Leicester, J. & Son, ...	E. R. Ridgway, M.S.I., Architect, Long Eaton ...	—
Leicester, J. & Son, ...	T. Throup, Woodside, Horeforth ...	—
Leicester, J. & Son, ...	J. P. Dixon, Archt., Borough Chambers, Wheeler Gate, Nottingham ...	—
Leicester, J. & Son, ...	E. R. Ridgway, Architect, Long Eaton ...	—

ELECTRICAL PLANT.

Rotherham—Free Library and Baths ...	Corporation ...	H. Hampton Copnall, Town Clerk, Town Hall, Rotherham ...	23
Cheltenham—Electric Light Installation, St. John's Church ...	Electricity Committee ...	J. Weaver, Carlton-place, Hewlett-street, Cheltenham ...	Mar. 25
Manchester—Switchboard, &c. ...	Urban District Council ...	F. E. Hughes, Sec. Elect. Depart., Town Hall, Manchester ...	25
Farnworth—Wiring of Electricity Works, Albert-road ...	Corporation ...	J. D. Pember, Electrical Engineer, Council Offices, Farnworth ...	25
Warrington—Electric Tramways ...	Corporation ...	Preece and Cardew, 13, Queen Anne's Gate, Westminster, S.W. ...	27
Sunderland—Cables, &c. (One Year) ...	Corporation ...	J. F. C. Snell, Boro' Elect. Eng., Dunning-street, Sunderland ...	29
Amsterdam—Electrical Plant, &c. ...	The Burgomaster ...	The Direction of Printing Works, Achterburgwal 213, Amsterdam ...	April 7
Christiania—Telegraph Wire, &c. ...	Norwegian State Telegraph Dept. ...	The Technical Department, Telegraph Office, Christiania ...	9
Hornsey, N.—Plant for Electricity Works ...	Urban District Council ...	R. Hammond, M.I.C.E., 64, Victoria-street, Westminster, S.W. ...	11
Kirkcaldy—Plant ...	Corporation ...	Kennedy and Jenkin, 17, Victoria-street, Westminster, S.W. ...	15
Palencia—Telephone System ...	Spanish Government ...	The Commercial Department of the Foreign Office, Whitehall, S.W. ...	21
Leith—Steam Dynamo 35 kw. ...	Town Council ...	J. Gray Scott, Burgh Electrical Engineer, Leith ...	—

ENGINEERING.

Chichester—Water-Supply Works at Saden ...	Rural District Council ...	John Eastham, Clerk, Church-street, Clitheroe, Lancs ...	Mar. 23
Stoke Gabriel—Pipelining ...	Totnes Rural District Council ...	Thomas W. Windett, Clerk, Totnes ...	23
Manchester—Steel Lancashire Boiler, Bradford-road Station ...	Gas Committee ...	C. Nickson, Supt., Gas Department, Town Hall, Manchester ...	23
Wootton Waven—Wooden Footbridge ...	Stratford-on-Avon R.D.C. ...	W. H. Coles, Surveyor, Alveston, Stratford-on-Avon ...	23
Buxton—Steel Gas-holder Tank and Telescopic Gas-holder ...	Gas Committee ...	Harold Barker, Gas Engineer, Town Hall, Buxton ...	25
Dundee—Steel Gas-holder ...	Town Council ...	W. Mackison, C.E., Burgh Engineer, 91, Commercial-street, Dundee ...	25
Workington, Furness, W. & S. at Harbour and Dock ...	Corporation ...	Joseph Eden, A.M.I.C.E., 58, Pow-street, Worthington ...	25
Newport, Mon.—Constructional Steelwork, &c. ...	Corporation ...	H. F. Parshall, Consulting Engineer, 3, Princess-street, Bank, E.C. ...	26
West Ham—Steam Road-Roller (10-ton) ...	Urban District Council ...	The Borough Engineer's Office, Town Hall, West Ham ...	26
Shoeburyness—Iron Storage Tanks, Laying Mains (3,100 yd.), &c. ...	Urban District Council ...	Harold Harris, Surveyor, Clarence-street, Southend ...	26
Kettering—B. & S. Destructor ...	Urban District Council ...	T. Reader Smith, Surveyor, Market-place, Kettering ...	27
Skipton—Water-Mains ...	Town Council ...	J. Mallinson, Waterworks Manager, Town Hall, Skipton ...	26
Dorchester—Sewage Purification Works ...	Parish Council ...	G. J. Hunt, Borough Engineer, Guildhall, Dorchester ...	26
Exeter, Mon.—Water supply ...	Rural District Council ...	J. S. Corbett, Galway, Ross ...	29
Castlederg—Water Pipe ...	Corporation ...	William Hamilton, Clerk, Board-room, Workhouse, Castlederg ...	30
Guilford—Steel Arch Bridge ...	Urban District Council ...	John J. Webster, M.I.C.E., 39, Victoria-street, Westminster, S.W. ...	30
Wath-upon-Deane—Waterworks Extensions ...	Cockermouth Rural District Council ...	H. Cecil Poole, Engineer, Town Hall, Wath-upon-Deane ...	30
Penryn—Water Main ...	Town Council ...	J. B. Wilson, A.M.I.C.E., Court Buildings, Cockermouth ...	30
Blairstown—Water Main ...	Water Committee ...	The Borough Surveyor, Town Hall, Evesham ...	30
Penryn—Harbour Works ...	Harbour Authority ...	George Cunliffe, Burgh Surveyor, Blairstown ...	30
Caversham—Water Mains ...	Urban District Council ...	J. Partridge, C.E., Engineer, Town Hall, Penryn, Cornwall ...	30
East Retford—Telescopic Gas-holder ...	Gas Committee ...	S. Percy Andrews, Surveyor, 22, Prospect-street, Caversham ...	30
Tonbridge—Steel Laying Stage ...	County Council ...	J. B. Fenwick, C.E., Retford ...	30
Armagh—Steam Boiler ...	Guardians ...	Formans and McCall, Civil Engineers, 160, Hope-street, Glasgow ...	April 1
Midhurst—Cooking Range at Workhouse ...	City Council ...	Jos. T. Hinton, Secretary, Armagh ...	1
St. Albans—Laying Peds. & ...	Rural District Council ...	Edwin Albery, Clerk, Council Offices, Midhurst ...	2
Scarborough—Waterworks ...	Corporation ...	Bessley, Son, and Nichols, 11, Victoria-street, Westminster, S.W. ...	2
Barnesley—Pipelining (two miles) ...	Sanitary Committee ...	W. O. Woodall, Clerk, 32, Queen-street, Scarborough ...	2
T. & C. Hawkesley, C.E.'s, 30, St. George-st., Westminster, S.W. ...	Rural District Council ...	T. and C. Hawkesley, C.E.'s, 30, St. George-st., Westminster, S.W. ...	2
Leasingwood—Waterworks ...	Rural District Council ...	C. R. Pease, Engineer, Town Hall, Tordomden ...	4
Pennybont—Waterworks ...	Rural District Council ...	Fairbank and Son, Engineers, 13, Lendal, York ...	5
Princes Risborough—Waterworks ...	Barnstaple Rural District Council ...	Jesse Hurley and Son, Engineers, 10, Bridgend-road, Aberkang ...	10
Crothwaite—Widening Smithy Bridge ...	Cumberland County Council ...	Bessley, Son, & Nichols, Engs., 11, Victoria-st., Westminster, S.W. ...	11
Y. & N. & S. E. ...	Locharhead & St. Fillans Ry. Co. ...	Geo. Jos. Bell, County Surveyor, The Courts, Carlisle ...	11
Smithwaite—Stone Bridge across St. John's Beck ...	Cumberland County Council ...	Crouch and Hugg, Engineers, 23, B. & W. street, Glasgow ...	11
St. ...	Lighting Committee ...	Geo. Jos. Bell, County Surveyor, The Courts, Carlisle ...	11
St. ...	Brighton Town Council ...	Harold Dickinson, Manager, 1, Whitehall-road, Leeds ...	15
St. ...	Argentine Government ...	F. J. Tillstone, Town Clerk, Town Hall, Brighton ...	26
St. ...	Nevin Bay Granite Quarry, Ltd. ...	The Commercial Department of the Foreign Office, Whitehall, S.W. ...	May 10
St. ...	Guardians ...	Wm. Perkins, M.S.A., Architect, Bishop Auckland ...	—
St. ...	Corporation ...	Smith and Sidebotham, C.E., 1, Princess-street, Manchester ...	—
St. ...	—	E. Cooper Poole, A.M.I.C.E., 4, Portland-street, Southampton ...	—
St. ...	—	F. J. Ryner, Engineer, 8, High-street, Newhaven, Sussex ...	—
St. ...	—	The Engineer, Steward's Office, Infantry, Cambridge-road, N.E. ...	—
St. ...	—	Colman and Cooper, Engineers, 57, Henderson-row, Edinburgh ...	—

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ILLUSTRATIONS.

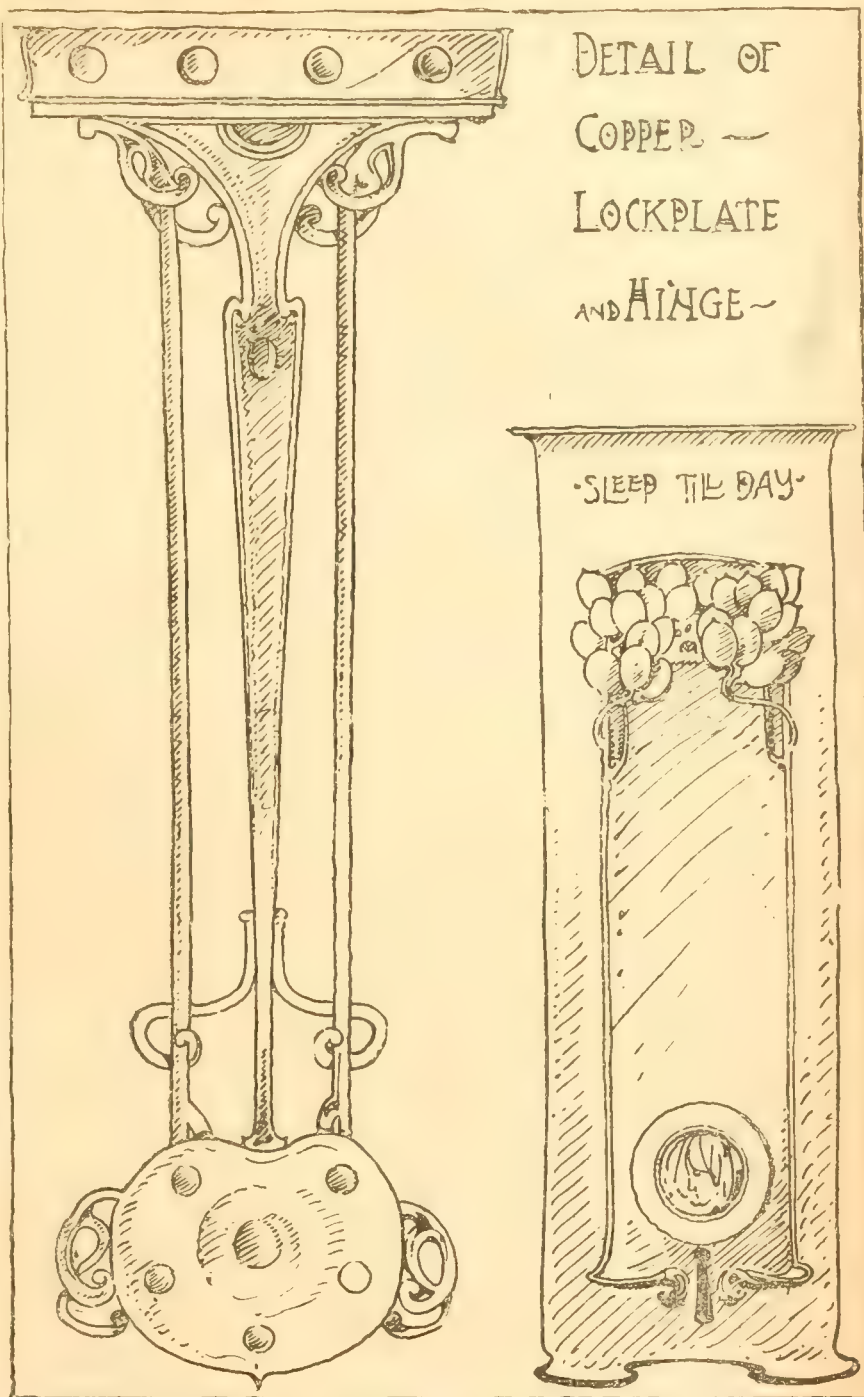
KIRBY HALL, NORTHANTS. THIRD PRIZE MEDAL DESIGN FOR NEW HARBOUR OFFICES, SWANSEA. HIGH SCHOOL, MIDDLETOWN, CONN. "OVERLOOK," WINDUSHEAM, SURREY. SCHEME FOR THE DECORATION OF A BEDROOM. DESIGN FOR A LIMBER FOOTBRIDGE.

Our Illustrations.

KIRBY HALL, NORTHANTS: R.I.B.A. SILVER MEDAL DRAWINGS.

KIRBY HALL, illustrated by the Silver Medal prize set of drawings, is so much associated with the Hatton family that we are apt to overlook the fact that it is not to the Hattons that it owes its existence, but to Sir Humphrey Stafford, of Blithewick. Proof of this is by no means wanting, for upon two of the panels of the parapet to the north elevation of the inner quadrangle his name is distinctly carved. The Stafford crest, the Aylesbury crest, and the Stafford knot alternately repeat in the two carved friezes running round the inner quadrangle, and they again appear, along with the initials "H. S.," on the friezes of the small doorways. John Thorpe was the architect, and, according to a note on his original plan, he laid the first stone in 1570. The likeness the plan bears to the arrangements now seen is striking; but the building was either not completed as drawn, or has been altered since. In all probability the portion lying to the south of the inner quadrangle was completed in 1575, for on the parapets may be found this date; the remaining portion followed immediately, and in 1575-80 the outer quadrangle was inclosed, including the large gateways. On the porch to the great hall is the date 1572, dividing the motto "Le Seray Loyal," showing when this portion of the work was completed. The house appears to have been completed inside and out by Thorpe, for the roof to the great hall is of the same date as the exterior, and is the only piece of original work left. The other rooms have been redecorated at a much later date. Sir Humphrey Stafford did not live long to enjoy this beautiful mansion, for in 1575 (the very year the parapet is dated) he died, and the property was sold to Sir Christopher Hatton, who seemed in no hurry to view his new purchase, for in 1580, writing to Sir William Heneage, he was about to visit and survey Kirby for the first time; this probably was on account of its unfinished state. The stabling was erected, according to a stone said to have been in the gable end, in 1595. Nothing now remains but the foundations. About 1636 alterations and reconstructions were carried out by Inigo Jones. The arcade on the south side on the inner quadrangle had new windows put in, and a clock-tower was added. The elevation to the outer quadrangle was entirely remodelled; only slight indications of Thorpe's work were left. A window and balcony was inserted over the porch entrance to the great hall. In the front to the garden a window and balcony were put in, as also in the back elevation. The doorway and steps, with window and balcony over, known as

* Other illustrations of Kirby Hall were given in our issues of Feb. 25, April 7, and May 12, 1876; Aug. 12, 1882, and Jan. 29, 1885.



SCHEME FOR THE DECORATION OF A BEDROOM.

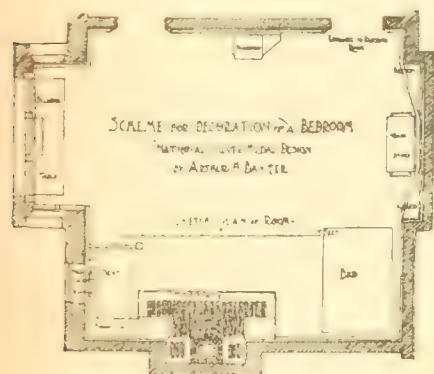
"Queen Elizabeth's doorway," the entrance from the grounds to the great hall, are of this date. In the outer quadrangle a small gateway was added, and a niche and seat were erected in the garden wall, which, though very dilapidated, may still be seen. What is now left of a palace once so beautiful and fair? Of all ruins in England, one of the saddest is that of Kirby. It is now desolate and dreary: the home of birds and bats; and yet so late as 1836 it was occupied by the family! But since that date it has been fast going to decay, a process which is all but complete. First the agent lived in it, then a farmer, and now a shepherd, and his family act as caretakers, and live in the library of one of the finest examples of Elizabethan houses ever built. At many places Time has done its worst: one can look on that with calmness; but to see, as at Kirby, the very action of decomposition going on is sad beyond words to express. A little outlay might at one time have saved what it would now cost much to repair. Here was once a fine collection of paintings and statues, and this was formerly esteemed one of the best-furnished houses in the country. The gardens were exceedingly fine, and the park contained nearly every species of English tree. Nothing is now

left but shreds of tapestry, crumbling stucco, and falling timber and masonry. The machinery of the clock which told the passage of time in Sir Christopher's day has fallen, and now lies rusty and broken in the cellarage, hopelessly intermingled with portions of broken finials and chimneys. Of the chapel, nothing remains to indicate its exact position, except by hearsay. Five years ago the grand staircase and kitchens fell, bringing with them the beautifully-decorated plaster ceiling to the staircase. The only portion of the whole house that seems to be resisting the ravages of time is the inner quadrangle—thanks to the splendid weathering stone employed by John Thorpe, which was quarried on the estates at Weldon, some three miles distant. The mouldings and carvings on this stone are as sharp as the day they were done. LAWRENCE G. BRIGHT.

SCHEME FOR THE DECORATION OF A BEDROOM.

This design, by Mr. Arthur H. Baxter, Liverpool, obtained a National Silver Medal. The essentially English sentiment expressed by the word "home" is the symbol of indoor life, comfort, and rest, but more often the idea is outraged by the inroads of so-called art. In many houses a glamour of "art" is aimed at, with taste so mistaken that

...of the room. No decoration, in any artistic sense, is possible unless it be the outcome of a tasteful entire scheme of a room considered as a whole, and no scheme can have any success where comfort and utility have been completely considered. Of all the rooms in a modern dwelling, the latter proposition applies to none more than to a bedroom, in a apartment to which most households think they have done their duty after filling it with the conventional requisites manufactured by the furnishing trade, together with such aesthetic trifles as may have been superior to them in the drawing-room below. The pleasantest element in Mr. Baxter's scheme for the decoration of a Bedroom is the notion that a bedroom deserves individual and characteristic treatment, and that such treatment should express the idea of repose and comfort, not merely by the literary aid of the inscriptions carved upon the woodwork, but by a restful harmony of colour, by the absence

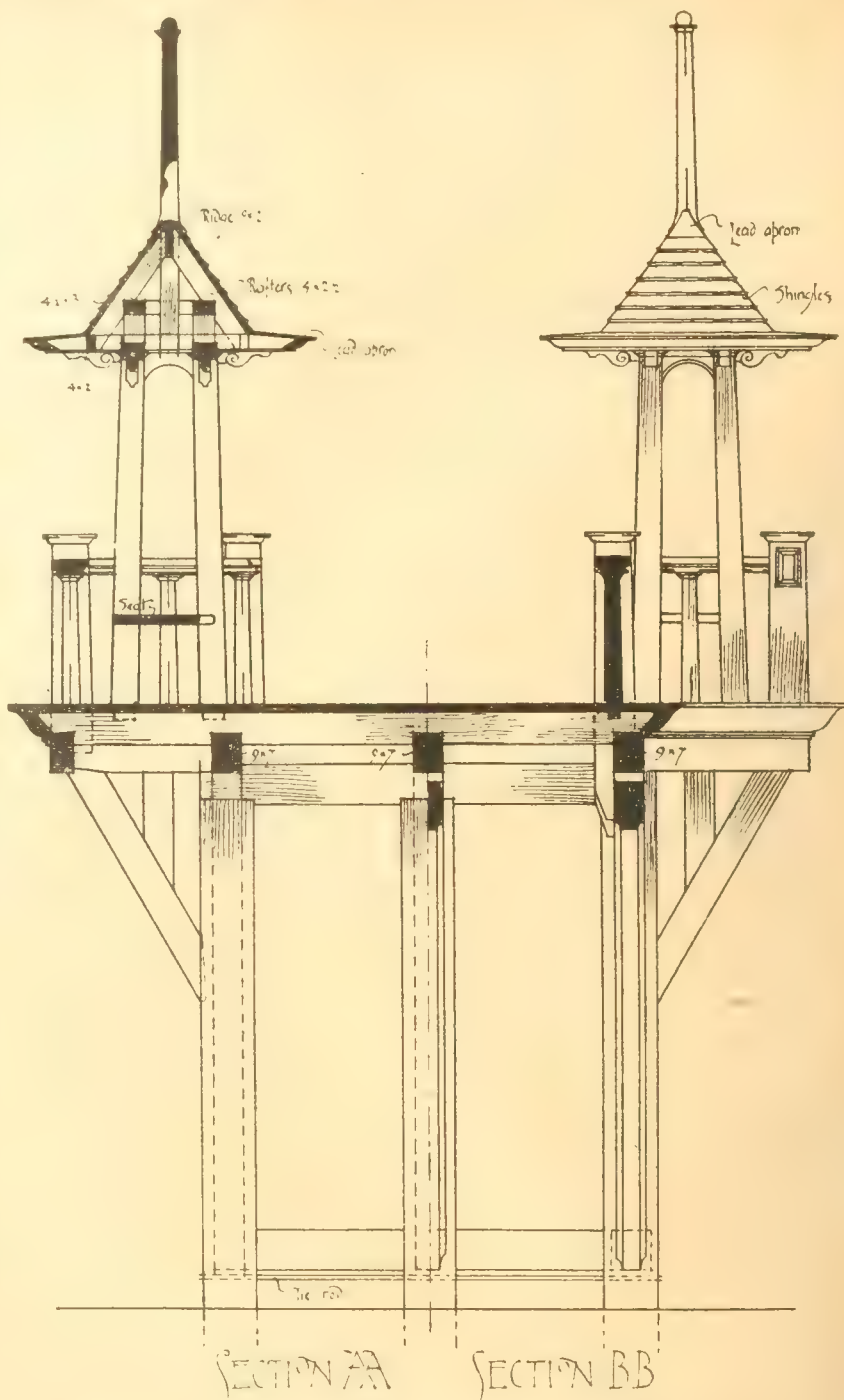


of decoration and unnecessary embellishments. Mr. Baxter has chosen a room of appropriate proportions. Without having it specially built he will be able to command an apartment so inviting; but there is really no reason why bedrooms should not be more picturesque in construction than the square cell, which, in various sizes, has been for centuries of two considered appropriate to sleep. The chief feature in Mr. Baxter's room is its simplicity, with its high. The furniture is in accordance with the architectural idea of the whole scheme. In all essentials the room is complete. The colour is a blended arrangement of tints of green crowned by a simple frieze. The panelling of the walls is simple, without separating them into distinct features.

NEW YORK, SWANSON, HENDERSON, AND SONS, ARCHITECTS, NEW YORK.

This building was placed second by the Society of Architects, W. M. Foxcroft, F.R.I.B.A., of Cambridge, and was awarded the premium of £50. The conditions were very carefully followed in planning, and the respective departments are self-contained. The main entrance was placed in the centre of the Adelaide-street front, whilst a separate entrance was afforded to the shipping office from St. Vincent place. The style adopted in the design of the building is a simple treatment of Late English Renaissance, and it was endeavored to give the block the official character which it demands. A caretaker's house is provided, having easy access to the main building, and a plot for future buildings is reserved on the south-western corner. It was proposed that the main frontages of the buildings be faced with red London pressed bricks and the dressings of Ruabon buff terracotta; the wood casements and frames being painted ivory white; and the roofs covered with green Westmorland slates. Interior: The halls, landings, and general offices to have faience dadoes, the upper portions finished in fine plaster; the bedrooms and private offices to have hard-wood dadoes; board and chairman's room to have polished mahogany dadoes and pilasters; harbour offices with fibrous plaster above same, and to the ceilings; the main staircase to be Stuart's granolithic steps, with terracotta stringers, handrail, and balustrade; floors throughout fireproof. Total cost, including heating, £12,000. The design was submitted by Messrs. Fairhurst, A.R.I.B.A., and Thornely, architects, 7, Chapel-walks, Manchester, and 54, Church-street, Blackburn.

This building, designed by its architect, Mr. F. R. Comstock, of New York, for a corner site, is for



DESIGN FOR A TIMBER BRIDGE.—By J. H. CORAM, A.R.I.B.A.

Middletown High School. The lower part is in Connecticut brown stone rusticated, the upper portion of the walls being in light-coloured pressed brick, with slate-covered roofs. The interior is finished in hard woods. The plate is taken from an original drawing lent us by the architect.

"OVERBROOK," WINDLESHAM, SURREY.

This country house in half-timber and brick was erected for Mr. C. D. Kemp-Welch, from the plans of Mr. W. West Neve, a great feature being made of the large bay seen in the sketch illustrated herewith. We have no exact particulars in further description of the building.

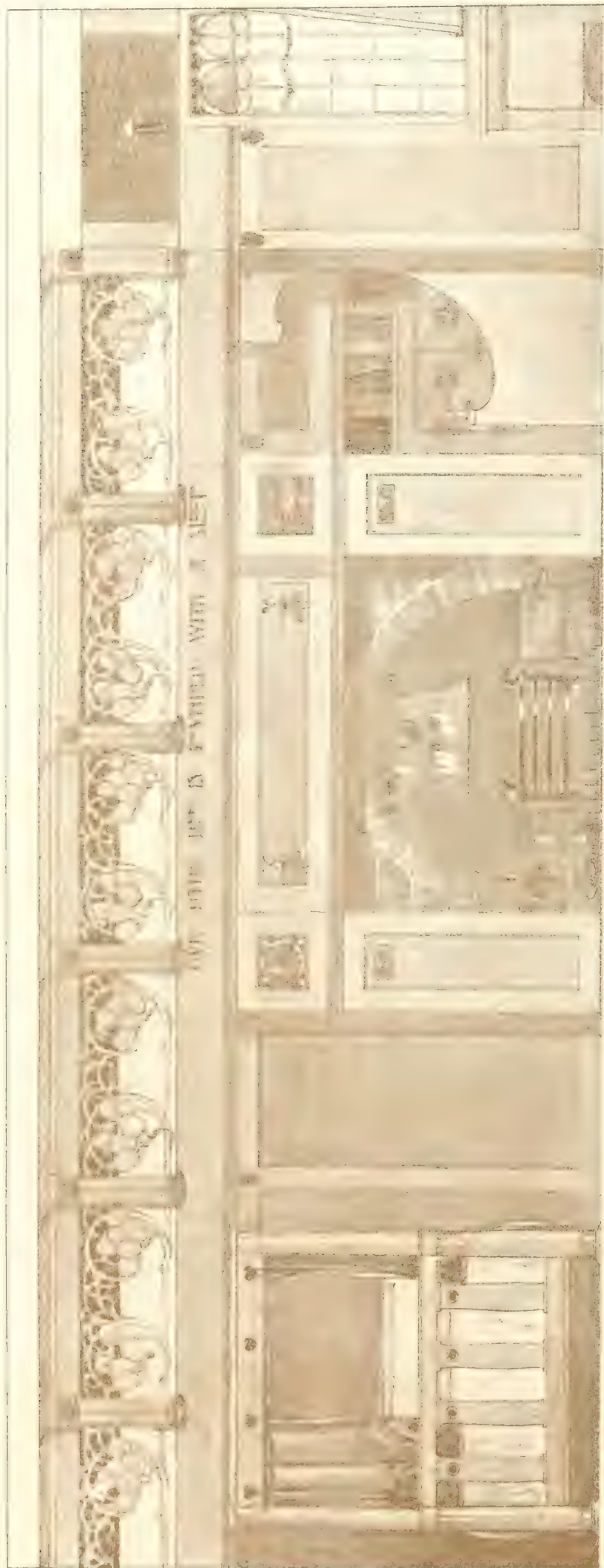
DESIGN FOR TIMBER BRIDGE.

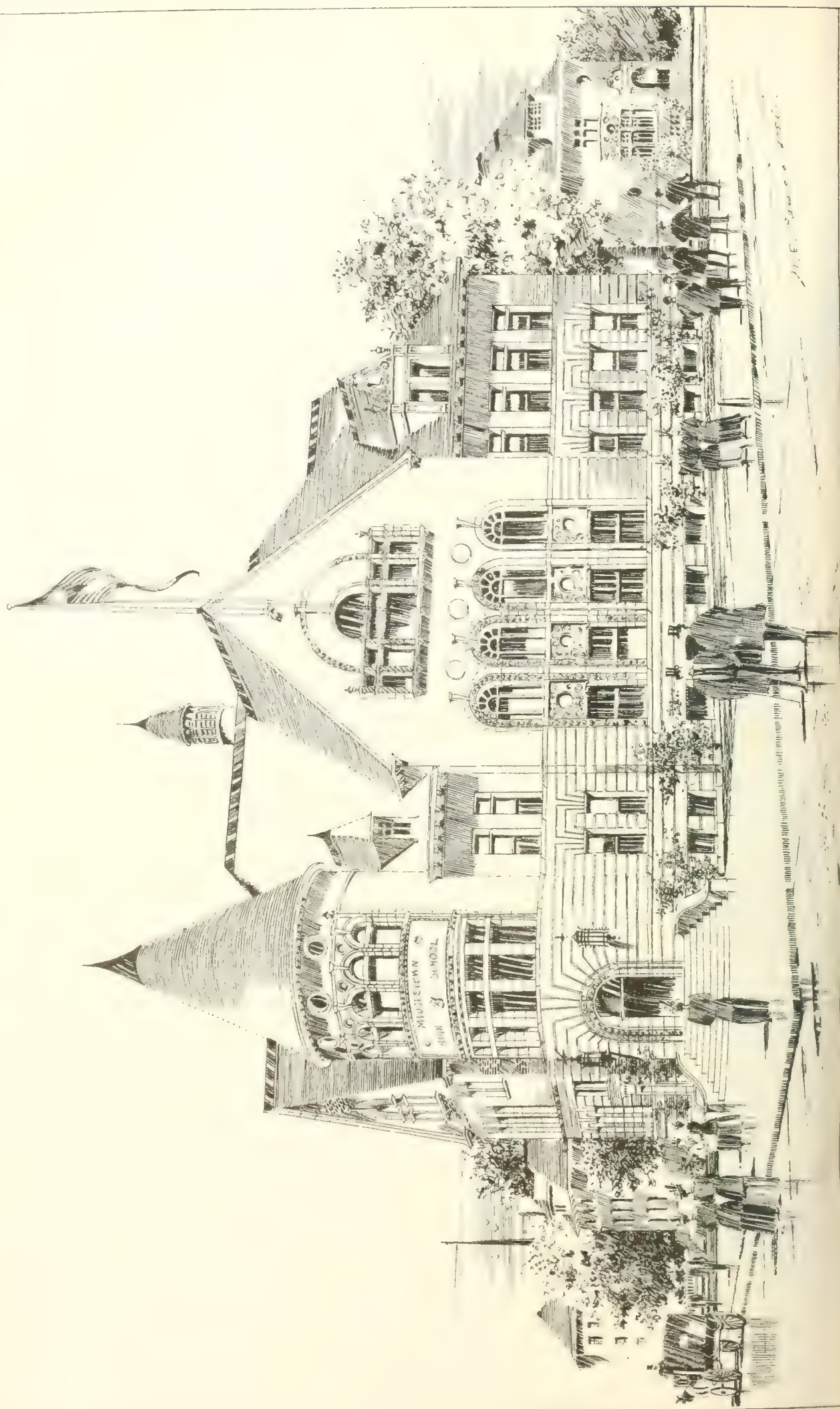
This design for a timber footbridge was in the last competition for the Gressell medal at the Royal Institute. A bridge with a span of 30ft. constructed entirely of timber was required, and to meet this requirement more fully, brick or stone abutments were not considered. Two arches were used—one for the main stream, and one for an assumed side-way. It was thought that the small shingled roofs might be of some service to the wayfarer as coverings for the seats, and also

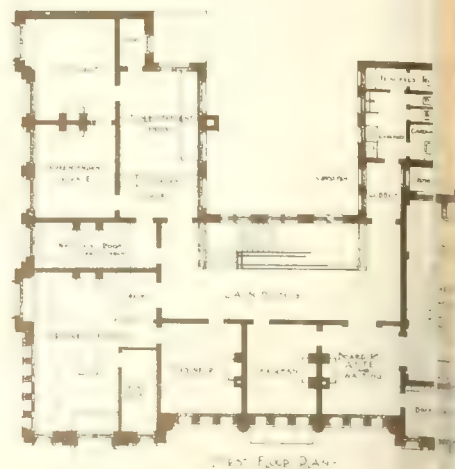
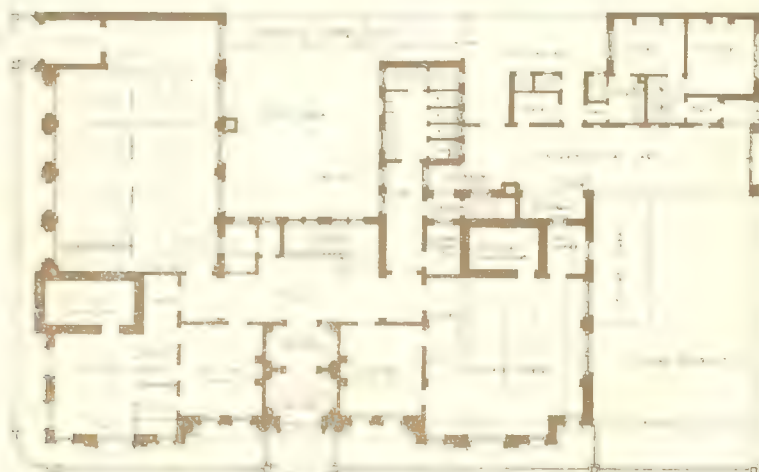
that they might serve to break the somewhat long line of railing. The whole design was kept as simple as possible. The author is Mr. J. H. Coram, A.R.I.B.A.

Two syndicates of considerable importance are at present being promoted to develop the slate trade of the Coniston, Torver, and Ulpha district. One is being promoted by Mr. John Poole, solicitor and coroner for Furness, who has already acquired the Sturdy Hall royalty at Ulpha, and is negotiating for other royalties in the Coniston neighbourhood. Quarrying operations will commence at once at Ulpha. The other scheme is in connection with the Broughton Moor quarries, and is being backed with East Coast capital.

The electric railway between Coulbournbrook, near Stourbridge and Kinver, was inspected by Col. Yorke, R.E., of the Board of Trade, on Friday. It is four miles in length, and for some distance follows the main road, and then is carried in a direct line from Wollaston to Kinver. In this part of the route the windings of the river have necessitated the construction of five bridges, and there is also one thrown across the Staffordshire and Worcestershire Canal. Mr. Sayers was the chief electrical engineer, Mr. Hedersterd the engineer, and Mr. George Law, of Kidderminster, the contractor.







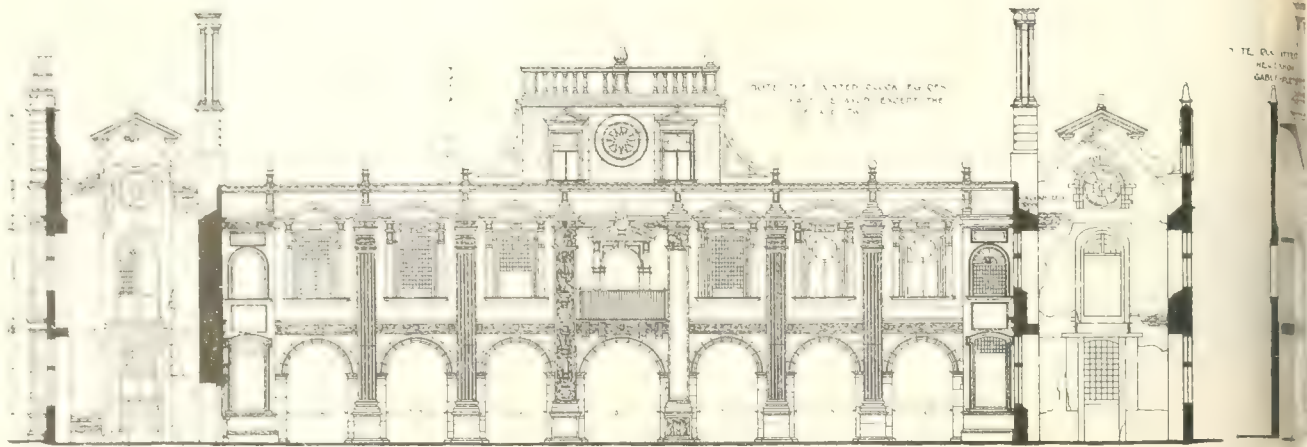
• NEW HARBOUR OFFICES SWANSEA •

ARCHITECTS' PREPARED DESIGN FAIRHURST AND TROSBLEY ARCHTS

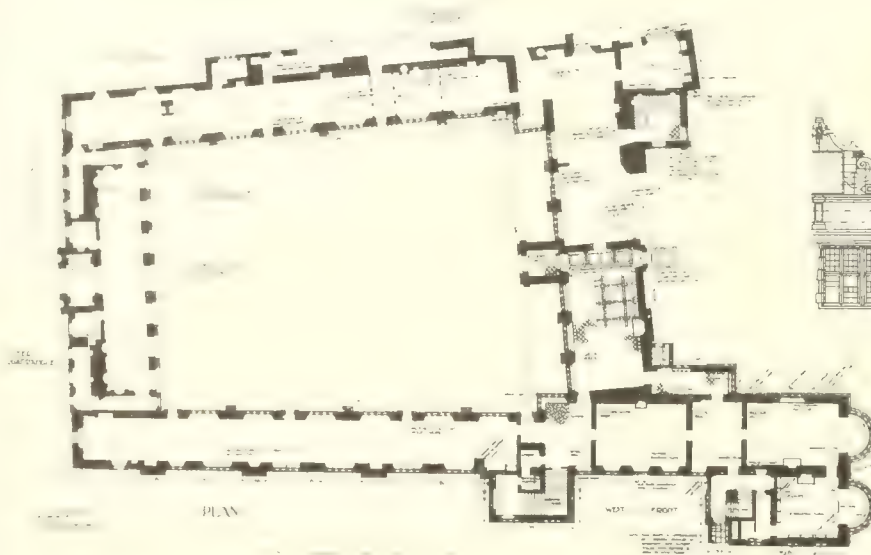




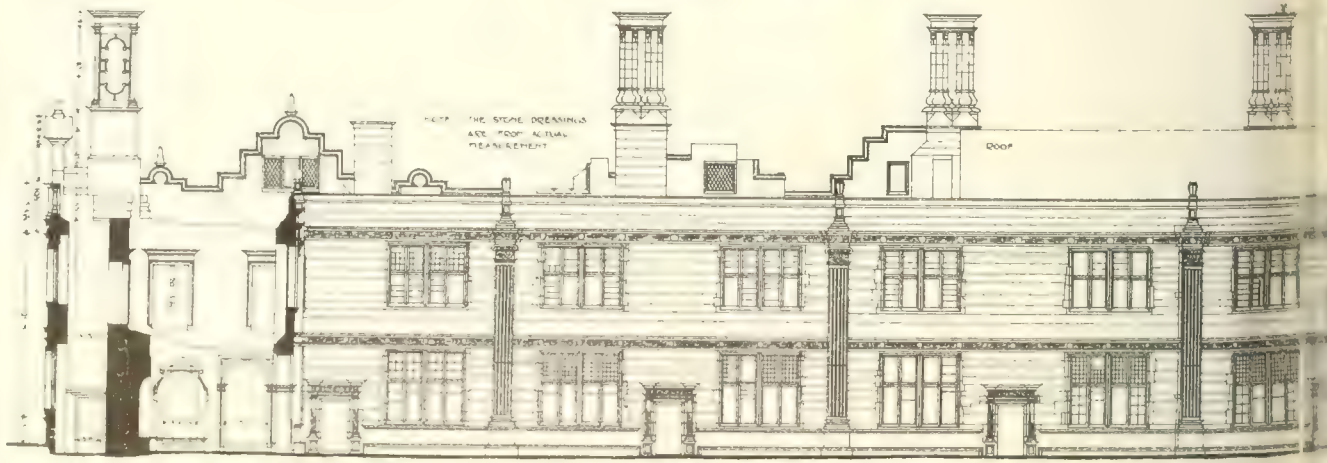
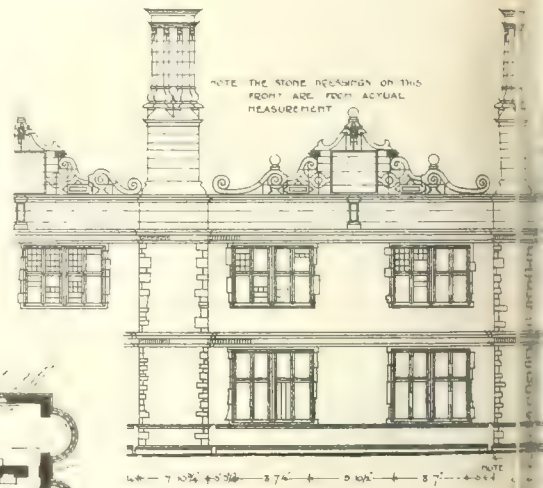
KIRBY HALL NORTHANTS



SOUTH ELEVATION
INNER QUADRANGLE



PLAN



WEST ELEVATION
INNER QUADRANGLE

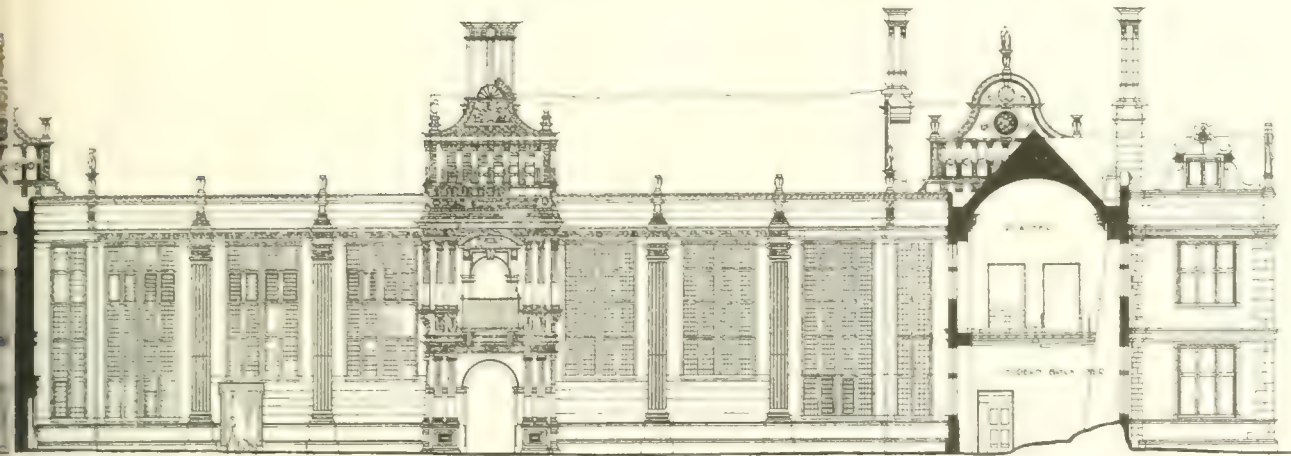
SCALE OF FEET

NOTES

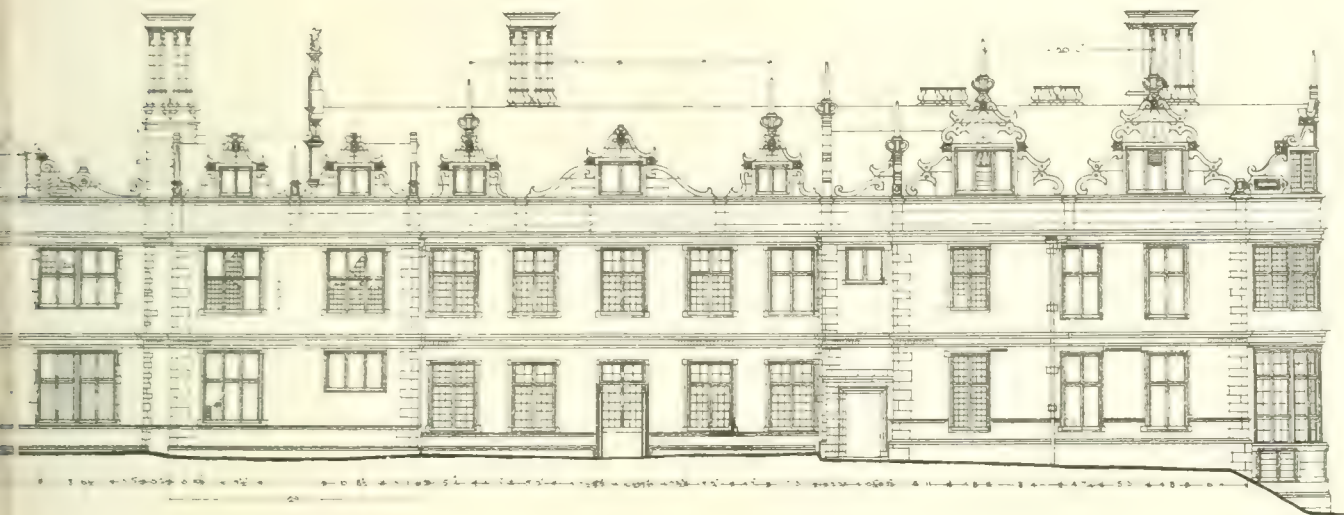
THE IN 1871 OF THE GREAT HALL AND THE QUADRANGLE ADJUT THE YEAR 1871 BY H. HENRY STAPPOD THE ARCHITECT BEING JOHN THORPE THE DESIGN ENTRANCE AND THE RIGHT HAND SIDE OF THE GREAT HALL WITH JACKS WERE FINISHED IN 1872 THE LEFT HAND SIDE WAS FINISHED IN 1873 THIS BEING THE QUADRANGLE THE FIRST HOUSE THE INNER QUADRANGLE HAD THEN BEING BY HENRY STAPPOD AND THORPE BEING AGAIN EMPLOYED AS ARCHITECT ADJUT IN THE OUTER QUADRANGLE

WAS THEN EMPLOYED ABOUT THIS DATE A HOUSE WITH WINDOWS IN THE OUTER QUADRANGLE WERE ADJUTED BY JOHN HENRY STAPPOD AND ALL THE CENTRE PART BEING FROM THE GROUND UP TO THE UPPER TENTH FLOOR THE INNER QUADRANGLE ALL THE WINDOWS WERE ADJUTED UNDER THE UPPER FLOOR AND A WINDOW WAS ADJUTED UNDER THE PORCH BEARING THE DATE 1873 THE SMALL LATERAL IN THE OUTER QUADRANGLE IS BY HENRY STAPPOD THE WALL LANGE ONES BY THORPE

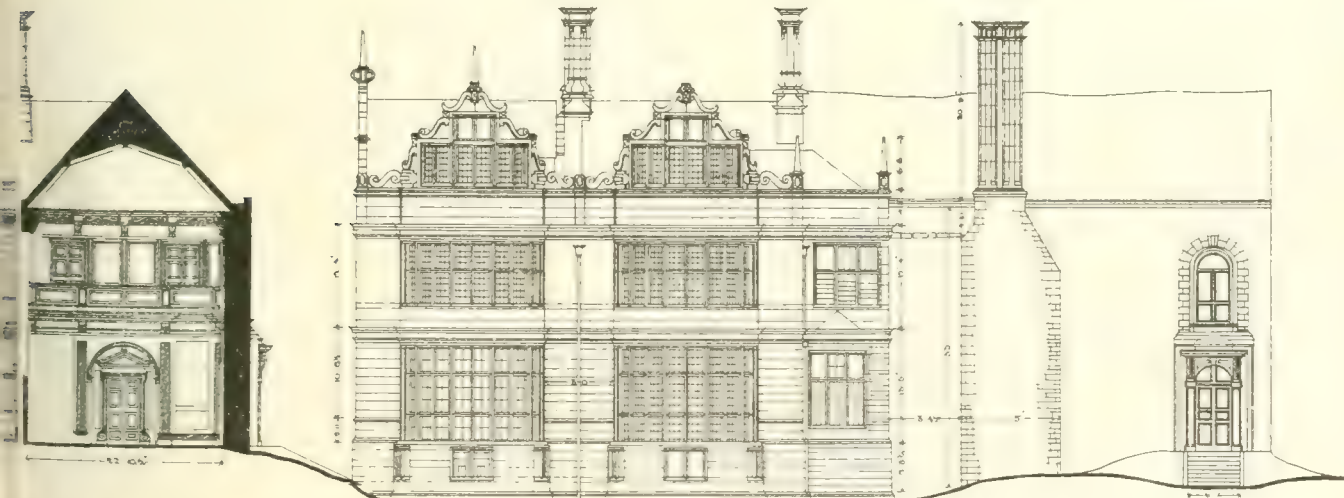
THE THICKS AND SEATS OF THE GREEN ARE OF HENRY STAPPOD THE HOUSES IN THE QUADRANGLE AND THE PROPERTY OF THE HENRY STAPPOD IN 1871 THE QUADRANGLE AND GALLERY OVER IN THE GREAT HALL HAVE BEEN REMOVED AND REPLACED BY A GALLERY OF A LATER DATE OF THE LONG GALLERY CEILING VERY LOW, REMAINS MUST BE SUFFICIENT HOWEVER TO INDICATE THAT IT WAS OF A LATER DATE THE VIEW OF THE GREAT HALL ADJUTED WITH THE STYLE OF THORPE'S HOUSE AND WAS BUILT ABOUT 1871



ELEVATION
EAST QUADRANGLE



WEST
FRONT



SOUTH
FRONT

THE
BOWS

STAFFORD
1871

DETAIL OF MAIN FACADE.

FIRST FLOOR PLAN.

SECTION

GROUND FLOOR PLAN.

0 1 2 3 4 5 6 7 8 9 10 11 12 FEET.



"OVERBROOK"
WINDLESHAM-SURREY.
FOR C.D. KEMP-WELCH ESQ.
J.W. WEST-NEVE ARCHT.







PHOTOGRAPH

SCHEME FOR THE DECORATION OF A BEDROOM. NATIONAL SILVER MEDAL PRAGIMUS.
BY ARTHUR H. BAXTER.

DESIGN FOR A TIMBER

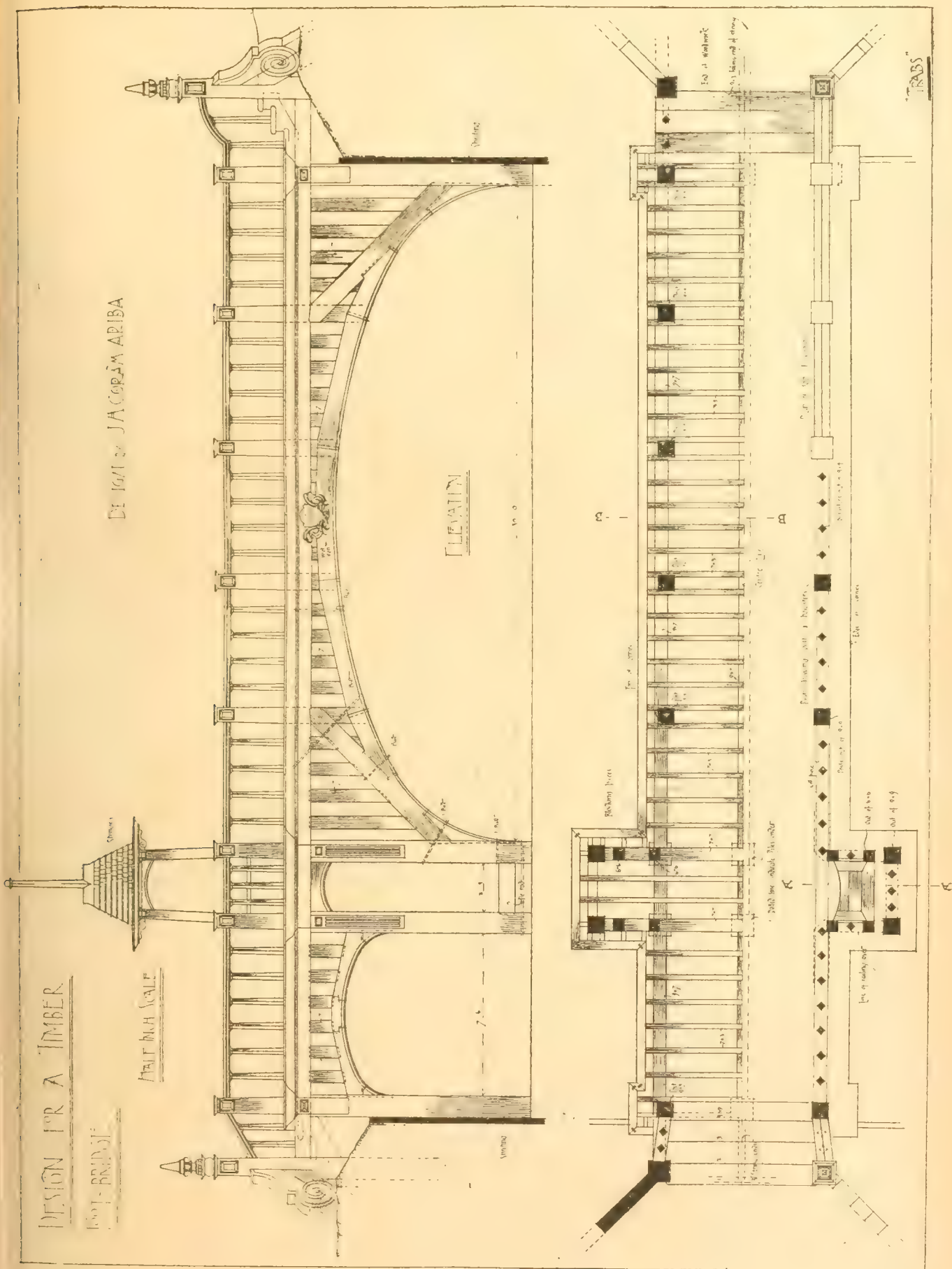
[GOLF-BRIDGE]

HALF INCH SCALE

DESIGN BY JACOBUS ARIBA

ELEVATION

TRANS



The rural district council of Erpingham, Norfolk, have adopted plans for the sewerage of the rising watering-place of Mundesley. The work is estimated to cost £4,200, and the plans have been prepared by Mr. J. Inglis Goldie, C.E.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

VOL. LXXX. No. 2443.

FRIDAY, APRIL 5, 1901.

NEW APPLICATIONS TO BUILDINGS.

THE century lately closed has added much to our store of methods and applications. When we cast our eye round on the number of inventions and new applications of old materials we possess on our building appliances and mechanical aids to construction—we may be well astonished at the extent and value of them, and wonder how we should get on without them. Scientific discovery has been a great help to the builder. One wise man has told us there is “nothing new under the sun”—which is true, in a sense. The Ancient Egyptians, Greeks, and Romans know as much as we do of the forces of nature, and could, from what we know by recent discoveries, transport huge monoliths to great heights, and move them hundreds of miles; they could throw across rapid currents and wide rivers temporary bridges of marvellous ingenuity; and they could conceive and design buildings that have been the wonder of succeeding ages. All this they accomplished with a knowledge of practical mechanics that is marvellous. What, then, is the great success we have achieved in the mechanical arts? We shall find that our progress has been largely one of making fresh applications. That the ancients knew the five mechanical powers, and were able to apply them with consummate skill we have now clear evidence from tomb inscriptions and recent excavations. It was the practical side of mechanics, of hydraulics and other sciences, that first received attention, and though these were more limited they were applied most efficiently to the practical requirements of architecture and engineering. Afterwards the theoretical principles became the subject of study, and to some extent obscured the practical issues. To our day it has been reserved to discover all the practical applications of science; hence our buildings and the operations connected with them exhibit a multiplicity of contrivance unknown to our ancestors. Most of these are new applications of old methods. To take, for example, our modern lifting machinery. The crane as we use it is an improved application of the wheel and axle through the intervention of sheaves, and the Armstrong crane is one form of the hydraulic crane, where the motion of the piston is multiplied by the chain which passes over blocks. Our builders highly appreciate the value of this appliance when fitted up high above the buildings upon lofty tripods for lifting huge blocks of stone and ironwork, and placing them in position. The ancients knew the lever, and used it, and we can trace it back as far as the time of Menes, the first recorded Egyptian king, who lived 4,400 years before the Christian era; now we have many applications of the same mechanical power, such as the weighing-bridge, which consists of three levers, several forms of laboratory instruments for testing materials; then the builder of to-day can use many appliances which depend on water pressure. He can not only work cranes and hoists, but forging and welding machines, punching, stamping, and riveting machines. Thus a riveter with a short ram of 8 in. diameter, can accomplish a vast amount of work; when used with accumulator and pumps, it can exert a pressure of 1,400 lb. per square inch. Again, by the same power, work of great mass and weight does not require to be brought to a machine; but a compact little appliance of 3 or 4 cwt., can be brought to the work—say a huge girder at a considerable height above the

ground, which will punch the holes and finish the riveting. Thus instead of huge beams and cog-wheels, hydraulic power through a small flexible pipe will do the work much more simply. In this connection we may recall the many useful applications to building of water pressure, as that used for warehouse and hotel hoists, where a small-pressure cylinder with its ram in the basement can be made, by a block with sheaves, to raise or lower a cage or hoist. The most perfect lifts—as the hydraulic balance lift—are the results of this power, where the vertical ram, actuated by low or high pressure, is always in compression supporting the load or cage, and where the pressure of water can be regulated to suit the load instead of balancing the dead weight of ram and cage by a weight at the side. The hydraulic lift in its improved form is a good example of how the old mechanical and balanced lift has been superseded. These are a few instances of modern applications of old mechanical and hydraulic powers to building of the present day.

Modern ingenuity has done much more in making our buildings comfortable, in making their sanitary arrangements perfect, and in these directions it may be said truly that we have surpassed the dreams of ancient builders. Mechanically, our improvements have not gone so far as to show any great advances. Our modern buildings cannot be said to exhibit any great mechanical progress in structural excellence over those of the Romans and Mediæval ages. Our vaulted structures are not more perfect as examples of skilful equipoise notwithstanding our inventions; our great bridges and roof-trusses show the one advance we have made in the employment of iron and steel, though we cannot affirm they show any progress in building construction. The greatest achievements in mechanical science are shown in engineering. But when we come to sanitary science, our progress has been more decided. In this sphere we seem to have surpassed the ancient builders in some directions. We have no evidence of their sanitary and hygienic arrangements, except those furnished by the Roman thermæ or baths. The system of heating by hypocausts has been described by Vitruvius and others. He describes hypocausts or hollow floors used for heating the hot rooms (*calidaria*). There were tubes of jointed clay pipe from the hypocaust through which heated air and smoke circulated between floors and escaped by a flue in the wall filled up with concrete. One method of heating was used during the later Empire. This was by lining the wall surface of bath-room with vertical lines of hot-air flue-pipes of rectangular section from the hot chamber, which had their escape above the roof. The recesses of the *calidaria* in the Baths of Caracalla were occupied by hot baths, made by such a hot-air jacket of flues. Then we know what the great arched cloacæ of Rome were, which drained every street of the city. These were marvellous constructions, prototypes of our modern arrangements. But when we come to the dwelling-house, we may assert that at no previous epoch have sanitary arrangements and applications been so perfect as they are to-day. We do not stop at public or municipal uses, but our sanitation has been applied to the smallest dwelling. It affects the individual citizen as well as the community. We have only to look over the sanitary manual or the trade catalogue of appliances of the sanitary manufacturer or plumber, where we shall find numberless inventions and fittings adapted with great ingenuity to closets, baths, lavatories, sinks, hot and cold-water apparatus, ventilating appliances, to every requirement of house drainage and water supply. These are mainly new applications of old principles, the results of experiment and a

more thorough knowledge of the laws of fluids and gases, of the laws of pneumatics and heat. Practical chemistry and bacteriological researches have enabled us to adopt methods of sewage purification, and of storage and filtration that our forefathers were quite ignorant of. Chemical analysis has completely changed our modes of dealing with sewage and effluents; we have sterilisation by heat, chemicals, and electricity. Electricity has been applied in various forms to building in the form of motors for driving machinery, for electric lighting, for bells, &c., and we cannot set any limit to its further development.

Inventive genius has called out numerous applications in the form of materials for building to which it is needless to refer here. The modern architect is beset with several patented artificial stones, new plasters, linings for walls and ceilings, metallic laths, and many fireproof slabs quite unknown to the old builder and plasterer, the uses of which have considerably modified building. Their effect on architectural design we can hardly foresee at present. In the earlier ages the architect had simply to deal with stone, brick, and plaster, materials of well-known properties that could be wrought and bonded, and the mechanical labour upon which in time evolved styles of architecture. But the same methods of conversion, of working and handling cannot be used for the block of artificial stone. It must be cast or moulded before erection; it cannot be cut or carved like stone, and the artificial substances or linings used for walls and ceilings must also be made or moulded before fixing. In the latter the material has to be fixed in sheets or pieces that have already been made to designs. The manufacturer does the architect's work, a contradiction to the conception of architecture to begin with. In the old craftsmanship days every material was submitted to the architect, and was fashioned by his directing mind. It was designed directly for the building, and with special reference to it, and was never intended to be placed in any other position. But in many kinds of decoration in the market, made of embossed materials and in those materials that are cast or moulded, the old principle is contravened. The same design is applied to a variety of different situations that have no conditions in common. Several very valuable new materials have been introduced during recent years, or rather new applications of natural substances, mineral and other, that have rendered the architect's labour much less difficult, and have introduced methods of accomplishing various important objects in building. The ancient builders did not know, for example, of any lining that would be light, thin, and non-conductive of heat and cold to cover the walls and roofs of his great interiors; they had nothing approaching the qualities of many of the fire-resisting and fibrous substances that we have; no fibrous plaster or asbestos slabs like “Uralite,” which we noticed last week as a material of great value; nor any preparation of wood that rendered it non-inflammable. They only used plaster or boards below their outer roofs; the cathedral builders soft stone for their inner vaults. If they wanted to render their walls and basements impervious to damp they were unable to apply such materials as Callender's pure bitumen or the Hygeian Rock composition. The ancient architect, if he wanted to ceil his church, could only do so by turning a vault of thin stone, or make a waggon-headed ceiling of wood; but the modern architect has the choice of one or more materials—such as fibrous plaster and other compositions—that can be used for ceilings or vaults, and at the same time form a decorative covering. He can now vault his buildings with a shell of concrete or some other material. We are continually hearing also of new applications of old materials for decorative purposes. One of these is the

decoration.

forged his own hinges or door-fastenings;

The supply is unlimited. But what are the

these modern facilities really helped us in our

notice is that the old designer or craftsman impressed every requirement and material with his own individuality; everything bore the impress of his mind. It is far otherwise

old designs show a directness which the

man went, as it were, direct to Nature for

the alembic of the mind of the artist from

its conception to its execution; the old

architect saw his own design carried out.

Nature has a great deal of this

directness of aim. The architect's design

delegates his work to the workman, or

out finished; the architect also leaves his

details to draughtsmen, and these in turn are

handed to the builder and foreman before

original design terribly modified or travestied.

As a result of this the artist's work

has made the architect more independent and

into a mere professional agent for other

people's work. He delegates his work to

engineers, large firms of masons, sculptors

and carvers, smiths, metal-workers, ceramic

manufacturers, and decorators, and the

result is often very much mixed, confused,

and inharmonious. Our buildings are apt to

suffer in integrity and unity of character

for another reason. In the old time there

were only a few well-understood materials,

and these were directly dealt with by

the architect. We have now numberless

new materials that can only be dealt with by

specialists and manufacturers, so that the

architect has lost touch with a great deal of

his work. Our great city buildings, suites

of offices, hotels, and warehouses are the

results. We cannot say they represent the

highest art in their execution. Their fittings

and equipment are the chief things aimed at,

and it is just this equipment that marks them

off from the buildings of a previous age. The

many-storied tenement house of New York

or Boston, of steel framework, which support

shafted piers, and painted glass, and its colouring is also of that mystic subtlety of blended hues which Sir Wyke Bayliss is so great a master of. The colour is heightened by the touches of scarlet and white in the cassocks, vestments, and surplices of the priest and acolytes proceeding to the elegant shrine in the foreground. On the opposite wall is a figure of a fair young girl "A Captive Briton" with a wreath of oak-leaves, clad in a blue embroidered robe, which discloses her bare shoulders and arms, carrying a salver of fruit. A background of white marble sets off the girlish figure with delicacy, but a little too much is made of the pedestal of flowers at her side. No. 33 we have a cleverly painted study of a little girl nursing a rabbit. The background of rich blossom of tulips, peonies, poppies, and other flowers is painted with much breadth and feeling, and the dazzling sunlight on the face and shoulders of the girl make a subtle study of light and colour by W. Graham Robertson. Other subject pictures to notice are Walter Blundell Thompson's "The Life Class" (62), a large classroom with students drawing a nude model of a girl seated, very reserved and quiet in tone; J. Milner-Kite's "La Toilette," a girl combing out her hair before a mirror in the dark. A vase of wallflowers stands on the shelf, and the dark blue of the girl's dress makes a nice contrast of colour; the dark sombre tones are helpful; and T. F. M. Sheard, the secretary's, large snow scene "The Outcast" (119), a snow-covered landscape with sunset sky. Trudging along the road, a young woman, her shawl covering her head and shoulders, passes a comfortable roadside homestead cottage with glowing light in the window. Behind, two other figures watch the lonely one, and in the distance is the village with its church. Mr. Sheard's scene has pathetic interest, and his rendering of the hoar frost on trees and hedges is well painted. Mr. Sheard's "Portrait" in another gallery (222) and his "Witch" (358) are clever. Robert Christie, a young painter, has an ambitious theme in his conception of "Juno" (130), a large work, decorative in its handling and blue colour. His goddess is apparently the Greek legend as she is described in the "Iliad," and is shown riding through the sky in a chariot drawn by eagles; on each side of her are peacocks; round the head of the goddess is a cloud of amorini and attendants. Landscapes and coast scenery are ably depicted in several works. Reginald Smith is masterful in his rugged cliffs and wild seas. His rocky coast scene (8) is forcible, and we notice the wave-beaten rocks in "Pentre" (163), a vigorous coast view. H. Percy Heard in his "Lonely Shore" (1), a sky and calm sea expanse, reflecting sunset clouds, is a fine colour harmony, and F. A. W. Armstrong's "Ilyn Bochlwyd, N. Wales" (22), a large rock-bound inlet of the sea, is impressive in its very darkness. Beale Adams's "Morning, St. Ives" (9) is delightfully limpid and fresh; long lines of wave crests tumbling in a sandy beach, and the colour charming. We must note also Alfred J. Edwards' very large sea piece, "The Sea Toiler's Home," with its liquid sea and harbour, admirable and rich in colour (29), and his other Scotch coast scenery (216). Percy R. Craft's (36) large coast view "Flirtation," a couple of young women walking along the beach, and a young fisherman looking back, has freshness and light. We must also notice some clever studies of figures by HARRY KING, "A Young Mother's Care" (47), "Watching," &c., in his usual finished style; a portrait by J. J. Alsop, a lady in low-cut satin dress, delicate in colour (55); M. A. Bell's "Gathering Apples," girls in an orchard, a study of sunlight gleams flat in treatment; Frank Spenlove-Spenlove's "Farm Road," a finely-toned evening effect, dark cottages and hills against a light sky, and Geo. C. Haité's

vigorous sketch of a wurzel field (46). His "Surrey Cornfield," and other landscapes show W. Haité's firm handling of colour. "Autumn Gold," a solid mass of foliage bathed in glowing colour, is rather a piece of impressionism. On the end wall Miss Ivo Rae paints a charming riverscape in shimmering grey pearly tones (89) "Winter Evening"; also a girl reading, "The Story Book," unaffected in pose and colour (93). Robert Morley's "An Old Crofter" (109), an old man over his porridge and biscuits, is pathetic; and "November," by C. H. Eastlake, in its breadth and flat tones of the trees and cottages and river, is marked by sincerity and truth of colour. Then we have a strong portrait of a lady (117), by B. C. Burnet; and J. J. Shannon's full-length "Portrait of Mrs. Harold Burke," in low-cut dress of figured satin and fan, graceful and refined. Other pictures in this gallery are a pleasing harmony, "Blue and Gold," a Ringwood landscape, by W. W. Manning (125), Rex Vicat Cole's large, solid, and finished landscape, "Banks of the Wharfe" (136), Tom Robertson's "Cool September Morn'g," a well-handled riverside, and works by Giffard H. Lentsty (142), and Adam E. Proctor (13). Rutland Barrington has two delightful Hampshire landscapes (34 and 140). In the South-east and North-east galleries a few works call for notice. Fred. F. Foottet has a fiery-red landscape, "The Sower" (152), rather sensational, and near it Ralph Hedley's large picture "Scottish Prisoners in the Tower of St. Nicholas, Newcastle," an episode in the Rebellion of 1644, some armed soldiers under the flying buttresses of the tower lantern. One holds a beacon light aloft, and we see the distant view of the city. It is bold and dramatic. Hal Hurst, whose work is always strong and convincing, sends a full-length portrait of Mrs. T. Bead (166), a fair woman in a rich, low-cut, black velvet dress with blue lined ermine cloak, a very stately figure. Gilbert Foster's little landscape study of an undergrowth (160) is a charming piece of colour; the grass is speckled with bluebells very tender in quality. A study of a girl reading (173) absorbed in her book, by William Kneen, is natural and unaffected in colour and style. A long, decorative design for "Panel or Frieze: Conflict," by Edgar Davies, deserves notice for invention and force: the conflict between men and the dragon is powerfully painted. George A. Holmes has a little subject, "Great Expectations," a boy holding a root through a styte filled with clambering young pigs, cleverly painted; and there is a rich colour and sincerity of handling in "Moorland Road: Otho Church," by W. Manners (191). Flora M. Reid's little market-piece, "Returning from Market, Rouen," is full of her wonted strength and character. Leonard Watts's portrait of a lady in bright pink silk is a trying subject to paint, and quite kills the complexion of the young lady. Very hard and unpleasant in colour also is F. Hamilton Jackson's classical figure-subject, "Autumn" (204). Percy R. Craft has "A Naturalist" (205), a boy engaged in mounting specimens of butterflies. A commonplace work is T. Percy Wild's "Sunny Backwater," a girl in a punt; and several other indifferent works of *genre* that would have been better excluded. There is not much in such a picture as the "Statue on the Grass," a young cavalier looking at the white headless trunk of a marble goddess lying stretched on the grass with her head in another spot—rather night-mareish in idea; or in others near to warrant hanging them. F. Whitehead's "Worcestershire Cottage" (212) is bright, also James Townshend's "Among the Golden Gorse" (221). A portrait by T. F. M. Sheard, and E. Borough Johnson's "Lady in Grey" are redeeming among a good deal that is trashy in sentiment, affected in composition and colour. E. Grant Rowe has a large landscape, rather agreeable in colour; but it lacks vigour and

THE ROYAL SOCIETY OF BRITISH ARTISTS.

IN the spring exhibition of this old society, some discretion has been shown by the hanging committee in excluding pictures of a commonplace and feeble kind, and to this extent it favourably compares with the productions of another recently opened exhibition. In the central gallery we notice a few bold canvases. The president's large interior of Louvain Cathedral (91) impresses by its noble perspective of receding vistas, its richly

detail in the foreground. W. Tatton White's "Herring Boats" (241) along a quay is admirable in drawing and atmosphere, and we have also a poetical composition by the secretary, "Music over the Seas: Soothly Stealing" (244), and "Warm September" (245), by J. Ireland, over the fireplace. J. D. Fergusson's Tangier subject is a strong study of sunlight and blue sky, with figures on the shadow of a wall. W. Ayerst Ingram paints a few strong seascapes. "Rescue," a large screw vessel bearing down on a shipwrecked crew (262), "A Liner" in the Bay of Biscay, indicate power and reserve in this branch. A. Moulton Fowleraker, in a road scene, "Cornwall" (262), has a quiet and sympathetic landscape—an open country road, with its line of telegraph poles along a field, very characteristic of the scenery. Alex. Maclear's "Edge of the Spinnay" is also truthful. The light and atmosphere in "Normandy Pastures," by Wynford Dewhurst (271), is subtle in its vibratory effect of sunlight. Very clever, too, is J. W. Parson's "The White Sands of Kilmoray" (268). Miss Agnes Stringer, in "Anxious Moments," depicts a cottage room, with a mother watching by the bedside of a child (269). Chas. F. M. Cleverly has a fantasy, "Children of the Mist," a rock-bound landscape; in the rising mist fairy figures are desporting themselves.

There are a few interesting water-colours in the north galleries. "Under the South Downs" (287), a meadow with girls at work, by Herbert Schröder, is broadly handled in flat washes of colour; and we also see some truthful colour in "Old Houses on Whitby Pier" (290), by W. Matthison. Giffard H. Lenfestey sends several studies of landscape, amongst them "A Hazy Wind" (290), appeals to our sense of colour and moving atmosphere. The two persons walking over the common under a stormy sky, pressed forward by the wind, and the old tower in the distance, make a pleasing scene. "Silver Light" (342), a moonlight effect, and "The Storm," full of freshness and colour in the sea, are other vigorous studies. Two pleasing studies of face and figure are "Simplicity" (289), a child's face very sweet in expression and simple, by J. Ernest Breun; and "Margaret" (296), by Victor W. Burnand, a study from Tennyson's poem, a three-quarter length figure of a girl in pale green skirt *décolleté*, with a large black hat, one hand holding the skirt of the dress, exceedingly graceful in drawing and colour. Hubert Coop's "Across the Sands," a large picture showing a sandy beach near sea; the painter has very realistically depicted the hillocks and rocks. The President's interior of "Basilica of St. John Lateran, Rome" (320), is masterful in drawing and colour. Arthur Tucker has a large picture, "A Westmoreland Sheep Farm" (329), a hilly landscape illumined by the sun and partly obscured by mist—very skilfully rendered; and we notice also W. H. C. Groome's "Flickering Shadows" (333), W. H. J. Boot's "Devonshire Mill" (345); "Isoult la Desirous" (346), illustrating Maurice Hewlett, is clever and quaint, a nude figure seated on a river's bank, by Arthur Stewart. J. J. Alsop, in "The Lovers" (351), a happy couple tripping over a field overgrown with wild flowers at sunset, has given us a delightful study, simply and feelingly conceived; so is "A Devonshire Cottage, Gwely" (365), Charles Low in the "Village Inn" (348), Miss Churton's St. William's College, and Thomas Dunning's "Moorland Road" (360) are of interest. The chalk cliff and figures (369), "Sunner," by W. H. C. Groome, are deftly drawn. Arthur Legge's "The Sentinel, Winchelsea" (376), a windmill study, is broad and unaffected; and Arthur Tucker has a pleasing village sketch (379). A rich piece of colour is Miss Ida Bett's "Visitors from Cornwall" (387). Over the fireplace is a cleverly-drawn figure study, "A Pressing

Engagement—Who said 'Cats'?" by W. Henry Gore, a young girl holding a dog in her lap, restraining him (395). The colour is refined. Lance Thackeray's "Breezy" (400) is delightfully fresh, and suggestive of strong wind; a number of people on an exposed promenade to the sea, simple and unaffected in handling. A few works on the screen, notably "A Breezy Morning," by F. Spence-Spenlove; "A Birch Study" (447), the "Blackbell Gatherer" (429), and a view at Minehead, Somerset (459) by J. J. Alsop, and some capital studies and sketches of Ely Cathedral, by Laurence Davis (444); "Silver Sands," by Tatton Winter, may be mentioned. W. T. M. Hawkworth's drawing of an old church interior, with carved pulpit (457), and E. Gouldsmith's "A Western Shore," a vigorous sea study (472), must be noticed. In the vestibule the admirable sketches by Tom Browne, including about thirty subjects, many of them brimful of humour, as in "Jack Ashore," "The Showman," "The Strong Man," "Finishing Touches," "The Race"; also a few broad sketches of landscape, as the "River at Blackwall," cannot be passed. Full of human sympathy and comicality, they are excellent examples of the work of this depicter of character.

VALUATIONS AND COMPENSATIONS. -X.

NOTES ON THE LAW.

LANDS CLAUSES ACTS.—THE CODE OF LAW FOR THE LANDS CLAUSES ACTS, 1845, AND THE LANDS CLAUSES ACTS, 1846, 1847, 1848, 1849, 1850, 1851, 1852, 1853, 1854, 1855, 1856, 1857, 1858, 1859, 1860, 1861, 1862, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873, 1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 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THE LANDS CLAUSES ACTS, BY JOHN T. REA, ADVOCATE.

SECTION 1. AND 11 OF LAND CLAUSES ACT, 1845, EXTENDED TO ALL SALES WHERE PARTIES UNDER DISSENT.

The scope of the 1845 Act extended to purchase of land for public purposes.

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Compulsory Purchase.—Unlike the case of a railway company, the Council can only be compelled to purchase land where the sewer affects the surface of that land. The Council may, as above stated, inspect drains and cesspools; and where these are found to be in proper order, they are to be reinstated at the expense of the Council, compensation being made for all damage caused by the inspection. Also, in covering over any open ditch, they must make compensation for any rights to the use of the water or stream destroyed or interfered with.

Nuisances. An action for a nuisance will lie where a stream becomes polluted by reason of a new system of drainage executed by a district board. Damage occasioned by the erection of urinals or other public conveniences is to be defrayed as portion of the expense of sewerage. Where the Council act under their power to remove projections, they must give seven days' notice; and in cases where the projection is removable under any previously-existing Act, no compensation need be made.

Sewers.—It is to be noted that should a sewer be constructed by any district board, and injury subsequently arise to such sewer by reason of works done on the adjoining land, the Board are not entitled to compensation. Should, for instance, the lateral support of the adjacent ground be necessary to the stability of the sewer, this must be secured by the purchase of the ground by the Board.

For these and other purposes the London County Council and district Boards are empowered, by the 18 and 19 Viet. cap. 120 (with which is incorporated certain portions of the Lands Clauses Act, 1845), to purchase lands, or any right or easement in or over lands, which they may deem necessary for the formation or protection of the works which they are authorised to execute.

No land or easement over land can be compulsorily taken without the written consent of the Secretary of State; and before applying for such consent the London County Council should advertise in a London daily paper at least once in each of four consecutive weeks, stating the nature of the works proposed; a place where a plan of such works may be seen; and the quantity of land or nature of the rights proposed to be acquired.

In addition, they should serve a notice on the owners or lessees, four weeks before application is made to the Secretary of State, stating the particulars of the land or rights required, and that the Council is willing to treat for the purchase thereof, and as to the compensation to be made for damage.

The modes of settlement of disputed cases are:—Before two justices, where claim does not exceed £50, or by arbitration where claim does exceed £50. There is no provision for a jury under this Act.

Where the works of the Council will interfere with those of any railway or canal, notice, accompanied by plans, is to be given to the company; and if within seven days objection be made, the works are not to be commenced, but reference is to be made to an engineer appointed by the Board of Trade on application by either party, to determine the manner in which the works are to be done.

UNDER THE LONDON BUILDING ACT, 1894:—

Frontage Loads. The London County Council may take down and set back buildings projecting before a general street line, making compensation for all damage and expense caused thereby. It should be noted that an error in the deposited plans does not invalidate the power to purchase compulsorily.

Disputes between building and adjoining owners are to be settled by a surveyor, or by a third surveyor appointed by those of the respective parties. An appeal to the County-court from the decision of the surveyors is allowed; and an action in the superior courts may be brought if the appellant can prove to the satisfaction of the County-court judge that, if the matter be decided against him, he will be liable to pay a sum, exclusive of costs, exceeding £50.

Building Owner. A building owner has a right, under certain conditions, to raise any party structure permitted by the Act to be raised; but he must make good all damage occasioned thereby. The damage here referred to is structural damage only, as surveyors called in to arbitrate on the dispute would have no jurisdiction on a point of damage to light and air. Under the Act, the

building owner is liable to a cumulative penalty for neglect to make good such structural damage.

Michael Angelo Taylor's Act (37 Geo. III.) was passed for the purpose of the better paving, improving, and regulating the streets of the Metropolis, and removing and preventing nuisances therein. Compensation is assessed on the same basis as under the Lands Clauses Acts.

HOW TO ESTIMATE; OR, THE ANALYSIS OF BUILDERS' PRICES.—III.

By JOHN T. REA, F.S.I., Surveyor, War Dept. LABOUR.

THE ratio of labour to material is an important factor in the calculation of the value of builder's work, and good or bad artisans may frequently make the difference between profit and loss on a building. Idle and indifferent workmen always mean a loss to their employer, and this has been emphatically brought home to the writer after four years' experience on Government works in the West Indies, where it was found that the economy of execution wholly depended on the strict supervision of the negro. The British mechanic, however, is capable and energetic when he likes to exert himself, but trade-unions have lessened the amount of his work, and by insisting upon a uniform rate of wages have reduced the good operative to the level of the indifferent one. This, and the risk which contractors run as a result of the various trade disputes, have caused a general advance in rates to meet contingencies. From 1865 to 1875 the general rise in the cost of building in London was over 12 per cent., while that between 1885 and now is assessed at 15 per cent. Within the last forty years workmen's wages show a total increase of 80 per cent., and materials have risen in cost nearly 60 per cent. This increase may likewise be attributed to the building regulations now in force, and to the greater conveniences and ornamentation in present-day houses.

The following table shows the proportion which materials and labour bear to each other in the different trades:—

Trade.	Proportion for Plant and Materials.	Proportion for Labour.
Excavator	1 1/2	11 1/2
Drainage work ..	3 3/4	2 5/8
Bricklayer	2 3/4	1 3/8
Mason	3 3/4	5 3/8
Slater	3 1/4	1 1/4
Tiler	4 1/2	1 1/2
Carpenter	2 3/4	1 3/8
Joiner	2 3/4	5 3/8
Smith	3 1/4	1 1/4
Plasterer	4 3/4	3 3/8
Plumber	2 3/4	1 3/8
Painter	1 1/4	2 3/8
Glazier	4 3/4	1 3/8

Wages and hours alter according to locality, and, it may be added, according to strikes; but, generally speaking, the time is about nine or ten hours a day, and five or six hours on Saturday. This may be taken at, say, 50 hours per week in summer, and 44 in mid-winter. The trade-unions are constantly dictating lesser hours and higher wages. The National Association of Master Builders of Great Britain issue statements from time to time as to the condition of trade, showing the state of the labour market and comparative lists of the hours worked per week, and the rate of wages per hour in the various branches of the building trade throughout the United Kingdom. For the purposes of calculation, ten hours per day have been allowed in this work.

The rates of wages in London may be taken as—

	Per hour.	Per day.
Excavators	7d. or	58. 10d.
Bricklayers	10d.	88. 10d.
Labourers	6d.	58. 0d.
Masons	10d.	88. 4d.
Paviors	9d.	78. 6d.
Slaters	11d.	98. 2d.
Tilers	10d.	88. 4d.
Carpenters	10d.	88. 10d.
Joiners	10d.	88. 4d.
Smiths	10d.	88. 4d.
Plumbers	11d.	98. 2d.
Plasterers	10d.	88. 10d.
Painters	9d.	78. 6d.
Glaziers	9d.	78. 6d.
Paperhangers ..	9d.	78. 6d.
Gasfitters	10d.	88. 10d.

The London radius, within which is the agreement as to wages and hours of labour between the Central Association of Master Builders of London and the various unions' operatives, is twelve miles, measured in a straight line from

TABLE XIV.

To inspect drains, privies, and cesspools.

To cover over ditches, open drains, &c.

To provide and maintain urinals and other public conveniences.

To erect and maintain projections in front of any building

to be erected.

in relation to the house wants careful consideration. I always try and make a separate approach to the billiard-room from the outside. In the suburbs it is usual to have certain evenings in the week for billiards, when it is understood that your friends will drop in without a special invitation for a friendly game, or to play in a handicap. If there is a separate entrance these visitors can come into the room without disturbing the other members of the family, and can leave without rousing the household if the billiard-room is kept open late. It always seems to me that a billiard-room in a small house such as we are now considering is an expensive feature, if you look at it in the light of the largest reception-room in the house being devoted to a game which on the average is not played for more than four hours a week. To obviate this, I have found Burnett's patent machinery for lowering the table into a pit and allowing a floor to be laid over the space makes this room available for other purposes of entertainment. This machine consists of four screws which work in a steel frame, and are connected by means of bevel cogs so as to all work together, and thus prevent the travelling table jamming; the screws bring the table up to the steel bed plate, and the table comes up each time to a dead level. When the table is lowered a beam of oak is laid across the opening and the flooring, made in convenient widths, is laid down on the beam, and the ends caught by a hinged board secured with cups and screws, which hold the false floor in its place. It takes about twenty minutes to get the table down and the false floor laid, and about thirty minutes to get the table back again and the false floor stowed away in the pit. I find it suits the min-

The double-hung sash is unquestionably convenient for lighting, ventilation, cleaning, and it is easy to keep clean of blinds or curtains. It is easily made weathertight, and is simple to fasten; but it probably requires more skill to make its appearance equal to that of a casement. The mullioned window, especially when long and low, and without a transome, is undoubtedly picturesque. The casements are difficult to keep weather-

tight unless they open outwards, in which case one at least of an odd number of lights can never be closed from the inside of the room, and they interfere with flowers on the windowsill. An even number of lights for cleaning purposes must have all to open in pairs. Opening inwards becomes the cleaning, which is perhaps the greatest difficulty, but makes deals with blinds, curtains, or a window-seat, and the absence of the weather-tight qualities.

THE DINING-ROOM.

In a house of this class is the most important room, and in planning this the furniture should be sketched in, and its dual use as a room for meals and the family sitting-room taken into consideration. A dining-table varies from 3ft. 6in. to 4ft. 6in. wide, and there should be room for one 6ft. to 7ft. long, and more at times, and a sideboard, one or two armchairs, often a couch or settee; and if there is no study, the books of the house and a writing-table will be here also. The room, therefore, should not be too small, as it often is, and in this room, in particular it is well to remember that doubling the area will not double the cost of a room. The best respect for this room is south-east. Where this room is general living-room as well as dining-room, a large bay or transept, making the room "L"-shaped, gives an interesting as well as convenient room. The bay is purely living-room, the other end of the "L" having the dining-table: the remaining portion has the fireplace and may be considered as belonging to each branch of the "L" in turn.

THE DRAWING-ROOM.

In small houses should be generally somewhat smaller than the dining-room, and is pleasant if it has the afternoon sun.

A THIRD SITTING-ROOM.

is a useful addition, and if on special occasions it can be thrown into connection with one of the others, so much the better. It serves as breakfast-room the day the dining-room is "turned out" (none here, I know the hall serves this purpose well, clothes being changed at 8 or 9 an hour). Its chief use will vary very much in different houses, as breakfast-room, morning-room, library, and so on.

BEDROOMS, ETC.

Roughly one-third of our time is spent in bed, and, therefore, the bed-rooms of the house should have particular care in their planning. An adult should have from 1,200 cu. ft. to 2,000 cu. ft. of air per hour, the latter dimensions being equal to a room nearly 20ft. by 13ft. by 9ft., therefore the necessity for insuring the repeated change of air in a room is obvious. Not only an exit flue, but an inlet is required. A deep bottom bead on a sash window enables air to enter at the meeting rail; I do not think the casement can be made to give this advantage. Sun also is very essential to keep the room sweet and healthy, and should enter early in the day. A bedroom hot in the evening from a setting sun is disliked by most people. If the room is near an internal angle of the building, see that the window is not commanded by one in the return wall. In planning the room, show the principal furniture, the bed, with the light, if possible, from the side, and space for a wardrobe. The dressing-table should have the back of the mirror to the window, or between the windows if there are two; consideration should also be given to the morning opening of the window without having to move furniture first. In artificially lighting this room the light should be so arranged with regard to the dressing-table, that the light falls on the dresser's face and not on the mirror. In a small room, if the bed occupies the position already suggested, this one light will probably serve the whole room. If electric, it is convenient to be able to switch it on and off from either the door or while lying in bed.

BATH, LAVATORY, AND WATER-CLOSET.

In connection with the bedrooms the bathroom will be much used, and in these small houses it assumes a much more relative importance than in large houses. In addition to the bath there should be a fitted lavatory, with hot and cold water (this arrangement means a great saving of labour in the house by lessening the amount of hot and cold water carried to each bedroom, and subsequent removal of slops). Some polished copper hot-water rails for airing towels are useful, and help to warm the room. The bath most commonly

used has a roll top edge and no casing; this is a common great mistake. As a rule, casings should be omitted whenever possible, but every part may be kept clean, but a bath is soiled in bulk, and has usually to be placed against the wall, so that no one can possibly reach over the top of the vertical space between the side of the bath and the wall. The shallow space between the bottom of the bath and the floor is almost a bad. Splashing over of water, often soapy, is inevitable, and the dust clings. As near as possible to the bathroom should be the upstairs water-closet, but never in it, although one sees illustrations of this. These two apartments seem to be the most difficult of all to arrange; they should be near the bedrooms, since the bathroom partially acts as a dressing-room, yet so retired that persons using the water-closet should not advertise their movements all over the rest of the house; and to this end do not permit any borrowed light from one or the other to a neighbouring passage, and be very careful in the selection of the water-closet apparatus and the water waste preventer that they may be as silent as possible. Next it is most important to remember that a water-closet is not merely an apartment 6ft. by 4ft. or thereabouts which may be partitioned off anywhere. It must not be overlooked that it is often 30ft. high; in other words, the soil-pipe is an essential part of it, and if you place a water-closet on the principal elevation near or over the entrance door, this soil-pipe and the ventilation pipe which extends it will spoil the effect of everything. Bath and lavatory wastes are nearly as bad. Over the scullery, or some of the adjacent pantry or kitchen parts, is the natural place; but see that the water-closet is not put over the larder—a point to which it always seems to gravitate. All places having water supplied to them should be as near to one another as possible, for economy of pipe work and also because of accidental overflows. A long distance, too, from the kitchen boiler to the bath or lavatory generally means that the circulating pipes have to cross hall or sitting-room; and as few people care to see them exposed here, they get boxed up in floors and other inaccessible places. To sum up this part, the bathroom and water-closet should be regarded as very large, their wastes extending down to the drains, their supply and ventilation pipes go up to the cistern and ridges of roof, and the bath has also a horizontal extension to the kitchen boiler.

THE KITCHEN, OFFICES, AND SERVANTS' QUARTERS.

In small London houses are usually very cramped and deficient, at least, to those like myself who have had some country training first. The points about increase of size should be borne in mind here in particular. The kitchen is also the servants' living-room, and, therefore, should have as good an outlook as possible, and some sun, preferably in the early morning. Adjoining should be the scullery, primarily intended for the keeping and cleansing of the cooking utensils and the rougher part of the preparation of the food, but many other duties are now thrust on to it. It is the place where nearly all the dirty work of the house is done, such as cleaning boots and knives, trimming lamps, washing up greasy plates and dishes; it is also frequently fitted with a gas-stove, and becomes the chief cooking place in hot weather. It needs a copper for the rougher laundry work that is always done at home. It is also the storage place for brushes and brooms, yet we are frequently asked to believe that a space about 6ft. square is all that is necessary. The larder must be placed so that it can be kept cool and away from the steam of the scullery copper. A lock-up store should be provided, where the lady of the house will keep extra groceries in reserve and where best dinner and other services and glass are stored. An exceedingly useful addition, even in the smallest house, is a china or housemaid's pantry provided with a lead-lined sink. Here tea and breakfast services are washed and stored, also plate and glass. Table-linen is also kept here. By attending to the lighter work here the mistress and young ladies of the house can assist without interfering with the servants. If planned as an anteroom between the kitchen and main house, it will also act as a ventilated dining lobby, and help to prevent an unavoidable cookery smell extending all over the house.

THE STAIRS.

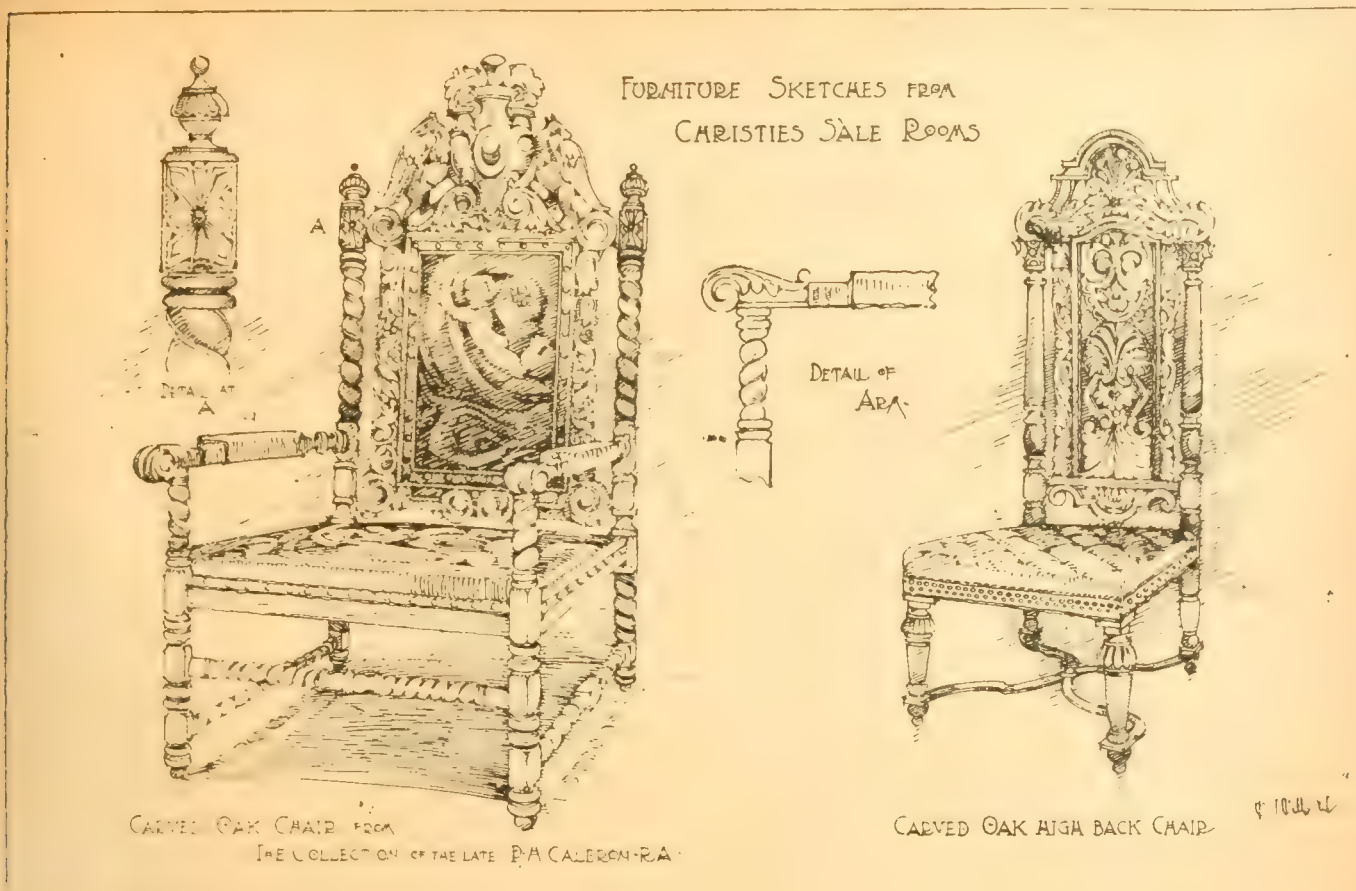
may be made the most picturesque part of the house, but they must be practical also. They will have to be used by the very young and the infirm. Winders are often dangerous, and should

never be curved, in part as they often are, at the foot of the stairs, it is intended to compel them. Bulky furniture will also have to be carried up and down at times, remember.

THE PLAN.

The width of the site is the next point to will determine the plan. Narrow sites must make the house more or less narrow, and it is possible to make it "semi-detached" (4ft. to 50ft. is the least on which the smallest detached house will look well). The variety of plan possible are more than is commonly supposed. In a terrace house the simplest is to put two rooms on a floor facing the front and back of the site respectively, a partition being cut off for a staircase, or the staircase may be put in between them. In these cases the kitchen and offices occupy a basement story, two sitting-rooms on the ground floor, with probably two floors of sleeping-rooms over. Constructively cheap, owing to small amount of foundation and roofing, which the increased thickness of walls will not outweigh, they are very inconvenient, owing to the amount of stairs. There is, of course, three times as much staircase in a detached house as in one of two stories. The first variation is to bring the kitchen to the ground floor in a wing behind the stairs, with the result that the look-out from one sitting-room is quite spoiled, the scullery or coals enjoying the view. Another arrangement transposes sitting-room and kitchen department, opening the kitchen from the centre of the house. In both these types the getting in and out of coals and dust is a great difficulty unless there is a back way. In the Midlands it is a common practice in small houses of this kind to make a passage at the side common to two houses for this purpose, and as a tradesmen's entrance. Larger terrace houses are obtained by placing the drawing-room or a study upstairs, and an additional floor of bedrooms. If this is done, great care must be taken with the approach. Most of us can probably call to mind examples where the stair is too narrow, and the bath and water-closet department too conspicuous en route. All terrace houses are open to many objections—the difficulty of getting sunshine to all rooms has been mentioned, and the difficulty with coals and dust where there is no basement. To these must be added that the drains, with rare exceptions, must pass under the building, and the transmission of sound from one house to another is very considerable. Piano-playing, singing, the running of children up and down stairs, and even conversation may be heard. As generally planned, the sitting-rooms of different houses have only a thin wall between them, and the front doors of two houses will adjoin. The passage of sound, of course, can be lessened by another arrangement, where the rooms have the staircase between; but the cost is greater, there being more brickwork, and the light and air to the centre part of the house is much damaged. In the London district there is also the aesthetic objection that the party-walls must show above the roofs, and they are very difficult to treat in a satisfactory way. In many of the London districts external walls within 10ft. of another house have also to have parapets above the roof. These points much affect the design. For example, a series of gables, with their ridges over the centre of each house, and parallel to the party-walls, would work in a most distressing and expensive manner. Wide-fronted terrace houses—i.e., those having two rooms on the front, have not been mentioned, as except on plots very shallow from road to back, or with a sharp fall to or from the road, where the long type is not easily fitted; they are not much in request. The chief advantage of dwelling in a suburb as against living more in town in a flat or house of equal value lies in having a garden or open space around the dwelling, and the possibility of the direct access to it for a wheelbarrow, &c., make the detached or partially-detached house a necessity, and these latter, moreover, get us over many of our previous difficulties. On narrow plots the semi-detached house seems to be the best plan already described. The front doors can, however, be put at the side away from the party-wall and thus secure greater privacy, but this generally requires a wider plot. Those pairs of symmetrically-planned houses seem to me to be among the most unsatisfactory designs ever produced. A symmetrical elevation to the road has a great pier instead of opening as the central feature, and this is usually capped by the end of the parapet of the party-wall, which goes up by all sorts of

LAST Monday, at a business meeting of the Royal Institute of British Architects, Mr. Edward A. Grüning, V.P., in the chair, the members considered the amended clauses brought forward by the special committee appointed by the Council to confer with the Institute of Builders as to an agreed form of Conditions of Contract. It having been, however, found impossible to secure a uniform form of contract agreed to by both Institutes, further negotiations with the Builders' Institute had been withdrawn, and the present meeting was held to settle to what extent the suggested alterations in the existing form of agreement issued by the Royal Institute of British Architects should be incorporated in the revised form about to be published for use of members of the R.I.B.A. Last Friday we printed *in extenso* the existing clauses and the suggested amendments. These latter were fully considered on Monday in consecutive order, with the result that all were adopted with one or two minor verbal alterations, excepting the proposed new arbitration clause, No. 32, which was unanimously rejected, the old form of the same clause being confirmed with the addition of a reference to clause No. 16, so as to include all matters concerning materials as being exclusively determined by the sole discretion of the architect. The clause will therefore read, with the modified interpolation of exceptions, "under clauses 4, 9, 16, and 19, and the exercise by him (the architect), under clause 18, of the right to have any work opened up." Thus, instead of enhancing the powers of the arbitrator under a contract, his scope of review of questions



CARVED OAK CHAIR FROM
THE COLLECTION OF THE LATE P. A. CALDERON-R.A.

CARVED OAK HIGH BACK CHAIR

in dispute will be more limited than heretofore. The argument used by those who advocated on behalf of the contractors for increasing the facilities of interference on the part of an arbitrator, particularly during the progress of the work, appeared to be that some architects are lacking in practical experience, or are actuated by malignant motives. On the other hand, architects are compelled to adhere to clearly-defined restrictions as to the powers of arbitrators on account of the fact that some builders are unduly litigious and unconscionable. The aim of the Royal Institute of British Architects has been directed towards a fair and reasonable form of contract which shall, as far as possible, insure justice to all parties. This determination was manifest at Monday's meeting, and it is a matter of regret that the Institute of Builders has not seen its way to adopt the view taken by the Architects. As the form of agreement will now stand, we think that every provision has been incorporated which could be properly devised, though, of course, no set form of agreement of contracts can be framed to meet special and individual cases, in which instances special contracts must be prepared as heretofore. The vast number of the official form of contract in use is the best evidence of its acceptable and approved character, and in the altered form in which it will now appear the further extension of its adoption may be looked for in the near future. Mr. Edwin T. Hall, F.R.I.B.A., has done considerable service to the Institute and the profession generally by the part which he has taken to further these improvements. Those who took part in the proceedings on Monday included Mr. T. E. Collett, Mr. John Slater, Mr. Fellowes Prynn, Mr. Maurice B. Adams, Mr. Rowland Plumble, Mr. H. H. Langston, Mr. C. H. Brodie, Mr. Pryce Cuxson, and Mr. E. W. Hudson.

FURNITURE FROM THE SALE ROOMS.

THIS Armchair is from the collection of the late J. H. Calderon, R.A., and is of a particularly roomy type, well enriched with foliage; it has a shield at back, with griffin supporters above a stamped and painted leather panel. The rails and legs are spiral, whilst the seat and arms are also of stamped and painted leather. The small High-back Chair is of Charles the Second's period. The back is pierced, and carved with panels and foliage; the seat of red morocco leather, studded at sides with nails; the

whole carried on carved legs, with X-shaped stretcher. The sketches were made at Messrs. Christie's Rooms.

BRITISH AND IRISH BUILDING STONES. —XXII.

CARDIGANSHIRE.

THE rocks here are of a few kinds, and all belong to the Silurian system, the divisions of which have not been worked out in this district or correlated with those of other centres in Wales, Scotland, or Ireland. Three main divisions of the system are recognised elsewhere—viz., the Upper, or Ludlow; Middle, or Wenlock; and Lower, or Llandovery;—and the rocks in Cardiganshire are provisionally placed with the latter.

Aberystwith is built on alluvium and blown sand; Cardigan, sandstone and shale; Lampeter, sandstone and slate rocks; Newcastle Emlyn, alluvium of the Teifi river, sandstone and slates; Tregaron, Greywacke, sandstone, and rough slates.

The rocks of Mid-Wales are remarkably similar throughout the district. They consist of beds of grit of the type known as Greywacke, originally a muddy sand. Coarse grit and sandstones passing into Conglomerates, all known as arenaceous deposits; and irregular shale, mudstone, Rab, Wrack, Pencil Rab, clay slate, coarse black slate, and bastard slate, all originally deposited as clay, and called Argillaceous, to distinguish them from the sandy or Siliceous rocks. Greywacke is a coarse slate, which, in the finer-grained varieties, passes into clay slate. When the fragments included are large and numerous, the Greywacke passes into breccia or conglomerate. This dissonant German name is therefore applied to a rock which may be a slate, a sandstone, or a conglomerate; it is, in fact, a slaty paste or matrix in which is imbedded particles of other rocks, varying in size from the smallest grains to pieces two or more inches in diameter. Rab breaks into small fragments when exposed to the weather. Pencil Rab breaks into long fragments, and Wrack is a coarser and larger form of Rab. The sandstones and rough slates are used for walling, the dressings of the important buildings being generally of Bath stone or some other oolite, or soft sandstone. Many of the Silurian grits, slates, and sandstones have been worked as quoins, sills, and other dressings on which there is not much labour. At Devil's Bridge and

Llantrissant the sides and roofs of piggeries and other offices are made of large flags quarried in the upper part of the Aberystwith grit beds. These flags are generally from 4ft. to 6ft. square, and 3in. to 4in. thick. Slates are worked in small quarries for local purposes, but these are mostly of an inferior kind for roofing. Slate slabs of good quality are obtained in several quarries—in fact, slate rocks run across the county in a northerly direction from Cardigan to Machynlleth. Coarse sandstone from Ystrad Meurig quarry, within 1½ miles of Strata Florida, was used in building Aberystwith stone pier. This stone is remarkable for its contorted structure—a feature common to the grit rocks of the district, and supposed to be due to the percolation of water through the once sandy beds after they were deposited, thus altering the arrangement of their constituent particles. The grit stones here are not in solid masses: they are divided by natural side joints and beds into separate blocks, which may be removed with wedges and levers without splitting any of the stones. Many of the coarser grits used for walling show crystals of felspar on their weathered surfaces, which would go to show that they have been derived from the degradation of older igneous rocks, which probably existed at one time in this locality, or close to it. The brassy-looking mineral common to these rocks is iron sulphide, and to iron carbonate is probably due the lenticular concretionary nodules known as "Cone-in-Cone," so common along the coast between Aberystwith and Borth. The late Professor Keeping classified the Cardiganshire rocks thus, in descending order: (1) Plynlimmon Grits, (2) Metalliferous Slates, and (3) Aberystwith Grits. All these he correlated with the Taranon shales of Montgomeryshire and the Birkhill black shales of the Moffat district in Scotland, both belonging to the Llandovery division of Silurian rocks. Aberystwith is in the centre of what geologists call an Anticlinal axis—that is, the rocks of the entire district are arched up towards that town; in fact, it is built on the crown of such an arch, but in this case some of the highest beds have been denuded or washed away along the axis referred to, and the lowest are met with eastwards towards the Devil's Bridge. The thickness of the Aberystwith Grits and Metalliferous Slates is estimated to be about three and a half miles! There is no good slate near Aberystwith, and the Argillaceous rocks are represented there by irregular shales, soft and bastard slate. The

Building Intelligence.

The name of Mr. E. C. Scrivener, architect, has been placed upon the commission of the peace for the borough of Hanley.

NOTICE.

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CLEMENT'S INN PASSAGE, STRAND,
LONDON, W.C.,**

where all communications should be addressed.

Telephone Address: "Times-Strand, London."
Telephone No. 1633 Holloway.

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TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many communications upon the spot, all to be correspondents.

It is particularly requested that all drawings and all material for the preparation of illustrations should be sent to the Editor at the Publisher's Office, Clement's House, Clement's Inn Passage, Strand, W.C., and not to the Editor's Office, as the staff by name. Delay is not unfrequently otherwise caused. All drawings and illustrations must be sent to contributors' risks, and the Editor will not undertake to pay for or be liable for unsought contributions.

The price of the paper is to be made payable to the Publisher, N. & W. P. CLAY, Ltd., London.

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SITUATIONS.

The charge for advertisements for "Situations Vacant" or "Situations Wanted" is ONE SHILLING FOR TWENTY-FOUR WORDS, AND SIXPENCE FOR EVERY EIGHT WORDS AFTER THAT. All advertisements must be prepaid.

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"BUILDING NEWS" DESIGNING CLUB.

SCHEDULE OF PRIZES.

A Cottage Hospital for an open site, the ground of which is 100 ft. by 100 ft. The accommodation is to comprise two wards of eight beds each for either sex, and an isolation ward for special cases with two beds. A day-room for men and women, each 14 ft. square or of that area; a matron's room about 12 ft. square, and a room for her use; a day-room for nurses of similar size; a kitchen, and offices. Each wing to have a bath and two w.c.'s and urinal for men; also next to each of the lockers for patients' belongings, eight in each department. 12 stairs, three bedrooms, two for matrons and one for servants; a study bedroom for the matron. Bath and w.c. on same floor, with good linen-room and box-room. Entrance road to the S.W. side, adapted to brick, with stone curbs, used, and tiled roofs. Ward chimneys may extend into their roofs, and not be less than 16 ft. high. Other rooms on ground floor 12 ft., first floor 9 ft., pitch from floor to ceiling. Two elevations, one section, two plans, and view. Scale 10 ft. to the inch; size of sheet 24 in. by 18 in.

Drawings to be sent to the Editor, "Times-Strand, London."

Correspondence.

ROMAN TESSELATED FLOORS.

From the Editor of the Building News.

SIR, Some few years ago, while excavations were in progress at Box, near Bath, some interesting remains were discovered. Amongst these was a tessellated Roman bath 8 ft. by 4 ft. 7 in. by 3 ft. 1 in.; a pavement 24 ft. by 5 ft. of labyrinthine fret pattern, and a quantity of loose tesserae sufficient to cover an area of some 25 ft. by 30 ft. The whole are offered for sale by their present possessor, Mr. M. Stier, Alpha Villa, Bath. Mr. Stier's idea is that the mosaic would form an exceedingly interesting floor for a chancel. The curious point to me, speaking as an outsider in the matter of Roman antiquities, is that some of the tesserae have sham joints—i.e., the larger stones (marble) have been cut across the face with saw and cutting gravel—and the apparent joint filled in with the same mortar the whole floor was originally laid in, so single pieces of marble are made to look like two or three stones. Is this distinctly a "trick of the trade" usual in old work?

I am, &c.,

STATUARY.

April 2.

Intercommunication.

QUESTIONS.

11700. **Softening Water.** Will one of your readers kindly suggest a simple and inexpensive method for softening water in a cistern supplying a house? I have just moved into a district where the water supply is drawn from a chalk formation, and it is necessarily hard, rendering it useless for domestic purposes, and bad for gout and rheumatic subjects. **AND CHALK.**

11701. **Iron Church.** Can anyone give reliable information on the length of time that an iron church may be expected to last with careful usage and reasonable attention? **No Sir.**

The Committee of the London Architectural Association announce that the new common-room at the Studio, Great Marlborough-street, W., will be completed shortly after Easter, when it is proposed to hold a students' smoking concert. It is further stated that, "owing to a variety of circumstances," the committee has decided this year to postpone the *soirée* and annual play. Particulars will be announced in due course.

The governors of George Heriot's Trust yesterday approved of an agreement with Edinburgh University Court for inaugurating a joint curriculum of study for a degree in engineering in the University and the Heriot-Watt College.

The Archbishop of Canterbury will, on Friday, the 12th inst., lay the foundation-stone of the new premises of the Canterbury Dispensary.

An attempt is being made to resuscitate the Plumbers' School, Lincoln. The old school, which became defunct in 1896, consisted of masters only; but the suggestion now is that the school should be carried on by masters and men conjointly. At a meeting of employers and employés in the plumbing trade recently held in Lincoln, a unanimous feeling was expressed in favour of re-establishing the school, and a committee was appointed to consider a scheme to that end.

The seventh annual Free Picture Exhibition, held in the borough of West Ham, was opened on Friday in the Public Hall, Canning Town.

The Bill to enable the Corporation of London to widen London Bridge has been reported by the Committee of the Chairman of Ways and Means in the House of Commons with certain amendments.

The new branch line from Coombe, the junction at which the Liskeard and Looe Railway will be connected with the Great Western system, has now been completed, and will be opened early in May. Col. Yorke, a Board of Trade inspector, passed over the line a few weeks ago, submitting it to examination, and he has given a satisfactory report.

Mr. Luke Fildes, R.A., has been honoured by the command of the King to paint a full-length State portrait of his Majesty. This picture will be representative of his Majesty in robes, and will be the official portrait of the King.

The Mallaig Railway, the extension of the West Highland line to the Atlantic coast, was successfully opened on Monday. The railway, which is single, with necessary passing places at stations, is 41 miles long, and has cost £550,000, of which sum the Government guarantee 3 per cent. on £260,000 for thirty years. The line passes through a part of the West Highlands rich in scenes of natural grandeur and beauty, and made classic by its association with "Bonnie Prince Charlie."

WATER SUPPLY AND SANITARY MATTERS.

BIRKENHEAD WATER SUPPLY.—The corporation have accepted the offer of Messrs. R. F. Craig and Co., Ltd., Paisley, to supply, erect, and fit up complete, at the Ford Waterworks, two sets of air-lift apparatus and pumps, capable of raising 16,000,000 gallons per week from a depth of 780 ft. in the bore-hole, and delivering the same into the tank on the water tower at Flaybrick Hill. As the question of the water supply to the borough is of pressing importance, the contract will be entered into without delay, in order that the supply of water at Ford Waterworks may be utilised to a fuller extent than has hitherto been possible, and to meet the increasing consumption of water in the area supplied by the corporation.

CONISBURGH AND DENABY.—The Doncaster Rural District Council have decided to apply to the Local Government Board for sanction to a loan for £11,720 for works of sewerage and sewage disposal for the towns of Conisburgh and Denaby, with a population of 16,000. The scheme comprises main and outfall sewers for the towns, also underground storage tank, with a capacity of 80,000 gallons, engine-house, duplicate engines and pumps, bacterial tanks, and laying out of land, from the design of Messrs. D. Balfour and Son, of London and Newcastle.

CHIPS.

Messrs. E. H. Shorland and Brother, of Manchester, have just supplied their patent Manchester grates to the Clare County Infirmary, Ennis.

The town council of Tynemouth have appointed Mr. F. R. Hull as engineer for the Font reservoir at Moorhouses, at a salary of £30 per month.

At the last meeting of the City Court of Common Council it was decided to lay Snow-hill, King-street, Smithfield, and Shoe-lane with hard wood at a cost of £2,820, and Leadenhall-street, Houndsditch, Angel-court, Finch-lane, and other thoroughfares with asphalt at an expense of £7,376.

A serious fire occurred on Thursday in last week at the Penketh works of Messrs. R. Garnett and Sons, cabinetmakers, at Warrington and Southport. The premises were completely gutted, and the damage is very considerable, a great amount of work being in progress.

Building operations are about to be commenced on the Fishery Estate, Maidenhead. Designs for several bungalows have been prepared by the architects, Messrs. Falgrave and Co., Westminster.

The partnership hitherto subsisting between J. Tavenor Perry and F. H. Reed, architects and surveyors, John-street, Adelphi, W.C., under the style of Perry and Reed, has been dissolved.

Sir Courtenay Boyle, the permanent secretary of the Board of Trade, sat on Thursday in last week to hear objections to the Order of the Light Railway Commissioners, authorising the construction of light railways in the county of Nottingham, in the borough of Mansfield, and the urban districts of Mansfield Woodhouse, Sutton-in-Ashfield, and Hucknall-under-Huthwaite.

The Manchester Racecourse Co., Ltd., and the Trafford Park Estates, Ltd., in the Second Court of Appeal on Monday, asked the Lords Justices to set aside an injunction granted by Mr. Justice Farwell, restraining the Racecourse Co. from selling the racecourse without first offering the property to the Manchester Ship Canal Co. at the same cash price as the intending purchaser was willing to give, according to an agreement entered into some years since. The Lords Justices held that the Judge in the Court below had come to a right decision, and dismissed the appeal.

The foundation-stone of the new Foresters' Hall at Dundee was laid on Saturday with Masonic honours. The building scheme has been entered into by the Dundee Courts of the Ancient Order of Foresters, and, when finished, the cost will be between £13,000 and £14,000. At the present time, however, the part of the scheme which provides for the erection of a large hall with two small halls is being proceeded with, and will cost about £8,000. The halls are to be erected on a site bounded by Ward-road, Rattray-street, and Nicoll-street, in rear of a block of tenements already the property of the Foresters. On the ground floor the small halls will be situated, giving accommodation for 300 persons, while the main hall will be on the first floor, accommodating 900 persons. Attached to the halls will be a reading-room, and on the second floor there will be committee-rooms and reading-rooms.

A branch library, reading-room, and public hall was opened on Saturday at Irlams-o'-th'-Height. The building, which has cost £6,000, has been erected by the museum and libraries committee of the Salford Corporation, with the help of Sir Arthur P. Heywood and other members of his family, who presented the site, and contributed largely towards the cost of construction.

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RELEASE ASSEMBLY HALL, THE GILBERT, DESIGN.

The plot of ground on which the buildings are to be erected has frontages to Fisherswick-place, Howard-street, and Wellington-street, and extends to 2,779 yards in area. The frontage to Fisherswick-place has been treated as the most important elevation, containing the principal entrance to the assembly hall and offices, which a side entrance has been removed from Howard-street. The assembly-hall has been placed on the Wellington-street frontage, and will back from Fisherswick-place, in order to avoid the noise of traffic in the street, and is included with well-lighted corridors containing the several entrance doors to the hall and the galleries. The hall is adapted to a deliberate assembly, and the seating is arranged on lines similar to that adopted in the general assembly-halls of the Scotch Presbyterian churches. The area of hall seats with comfort 891, exclusive of space for division lobbies, and is so arranged as to be available for 188 additional seats in case of large meetings. The galleries accommodate 509, and the whole, including the division lobbies, will seat nearly 1,600. A spacious vestibule or lobby is placed along the side of the hall, well lighted from large cupolas on the roof, which might form a gallery for portraits or other like use. The accommodation provided for on ground-floor comprises: Assembly-hall, new-room 1,050sq.ft. in area, cash-offices with strong-room below, office for secretary of missions, rooms for Sabbath-school society, five offices for letting, which are connected with stores in the basement under the assembly-hall; also sitting-rooms, cloakroom and lavatories, and caretaker's room, &c. The main staircase and the lift are located in a central position for communication with all the apartments on the upper floors. The accommodation on first floor consists of a minor hall 1,800sq.ft. in area, height equal to first and second floors), a lecture-room, young men's and young women's parlours, orphan society's offices and three committee rooms, city mission room, and cloakrooms and lavatories, also a suite of offices for letting, and on the second floor a gymnasium (2,400sq.ft. in area, side walls 20ft. high, with open steel roof), a recreation-room, classrooms and lavatories, and a caretaker's house. The staircases are continued up to attic floor, but nothing more was to be done in the way of completion, except finishing in the ceilings and floors and glazing the windows; the walls to be built of brick and the floors of concrete and steel, with wood blocks. The exterior was intended to be faced with red brick and red sandstone dressings from Dumfriesshire, and the roofs covered with green slates. Panels for sculpture of a suitable character are shown at the principal entrance

door and in the two front gables. As this soil is an estuarine deposit, about 50ft. deep, piled foundations were necessary. The total cost of the proposed buildings was stipulated not to exceed the sum of £30,000, which, however, does not include heating and ventilating or electric lighting. The author of this design, which was placed third in the late competition is Mr. W. C. Laidlaw, of Edinburgh. We illustrated the second premiated design in the BUILDING NEWS for Dec. 11, 1900, and shortly shall publish drawings of the design placed first.

KIRBY LAKE, NORTH-HAMPTONSHIRE. GILBERT, STAFFS. METAL DRAWINGS.

LAST Friday we published the general drawings of this remarkable and famous old mansion, for measuring which Mr. Laurence L. Bright was awarded the Silver Medal of the Royal Institute of British Architects this year. To-day, from the same set of drawings, we publish a sheet of details of the porch in the inner quadrangle, and also a section through the great hall, giving the minstrels' gallery with its Later Renaissance panelling and doorway. The cornices drawn at large make useful details of historic interest.

WALSOKEN CHURCH, NORFOLK.

MISS MARY S. PECK'S VERY interesting water-colour, giving a view of this notable church, shows the nave looking towards the north-east into the chapel on the north side of the chancel, and includes the pulpit. The picture was awarded a National Silver Medal, and was selected by the Science and Art Department for the exhibition of representative works last year at the Paris Exhibition. We gave another view of the same church, also from Miss Peck's pencil, in the BUILDING NEWS for Jan. 25 last, when a description of the building was printed.

SELECTED DESIGN FOR THE GILBERTON HOUSES, NOTTINGHAM.

THESE drawings illustrate the selected design in the recent competition. It is intended to use red sand-faced bricks for the lower story and rough-cast, lime-whitened, for the upper parts of the walls, using red Broseley tiles for the roofs. The perspective shows two of the blocks placed at right angles one to the other, forming a quad. The plans show the arrangements of the houses, but there is a slight modification as an alternative given in the contrivance of the bays to the ground-floor rooms.

TANNERS' MANOR, HOUSE, SUSSEX.

HISTORY records that in the year 1585 Sir P. Sidney died "sized of the Manor of Tanners." From 1603 to 1617 this estate belonged to the Sackville family, from whom it was purchased by one Mr. Samuel Fuller, the builder of the original mansion, his initials "S. F." appearing over the entrance porch. After being held for many years by the Fullers (whose names are associated with the now extinct iron-quarrying industry of Sussex), the estate was purchased by the present owner, Mr. B. S. Hassell, from Mr. Myrick Fuller, of "Rose Hill," Brighting, in 1877. Like many other old houses, it has had its period of neglect, until the present owner took it in hand. In renovating and adding to the manor house the selection of materials has received careful consideration, in order that the new work may be as closely assimilated to the old as possible. The works have been carried out in a satisfactory manner by Messrs. Strange and Son, of Tunbridge Wells, under the supervision of the architect, Mr. R. C. Tuppen.

SKETCHES OF BELGIAN WOODWORK AND CASEMENTS.

THE well-proportioned door and chair from the Plantin Museum, Antwerp, shown herewith, are only slight examples of the many sketched objects which the museum contains. The chimney-pieces, with picture panels, ceilings, staircases, &c., provide studies in plenty for the student, and have often been illustrated. The old Chairs from Notre Dame des Victoires, Brussels, are interesting from the fact that they are reminiscent of the work of our foremost designers. The church itself, Late Gothic in character, is suggestive in ideas for present-day work. The Casement Windows, of which working sections are given from Bruges and Ghent, show how our Continental friends endeavour to keep out wind and weather. An opening-outer casement is seldom used, hence a greater difficulty in getting a tight job. DAVID BEVERIDGE.

COMPETITIONS.

Bristol. A definite decision has been reached in the needed enlargement of the Bristol Police-courts has just been taken. At a special meeting of the corporation finance committee, on Monday, the plans submitted in competition for premiums offered for the extensions were considered. Seventeen designs were sent in, from which the committee selected five; and, after consideration, the first premium of £100 was awarded to Mr. Henry Williams, Bristol, and the second of £50 to Messrs. Buckland and Farmer, of Birmingham. The three others of the five selected were those of Messrs. Holbrow and Sons, Mr. E. C. Hanson, and Messrs. La Trobe and Weston. The adjudication took place before the envelopes containing the architects' names were opened.

QUEEN VICTORIA MEMORIAL. The well-known architects, three practising in London, one in Edinburgh and one in Dublin, have been chosen to submit competitive plans for the structure which is to be erected as a National Memorial to Queen Victoria in front of Buckingham Palace. It will enshrine Mr. Brock's statue already commissioned by the Memorial Committee, with the approval of the King. The architects invited to send in plans and designs to H.M. Office of Works are:—Mr. T. G. Jackson, R.A.; Mr. Aston Webb, A.R.A.; Mr. Ernest George; Sir Thomas Drew, of Dublin; and Dr. Rowand Anderson, of Edinburgh. The designs are to be forwarded to the Office of Works in Storey's Gate by the end of June, and they will be exhibited immediately, so that the public may judge of the way in which it is proposed to spend the sum which is being so rapidly collected.

CHIPS.

Frensham Pond Hotel, situated amongst the pine woods of Surrey, near Hindhead, is being enlarged by Mr. Chuter, builder, of Frensham, Surrey, under the direction of Messrs. Law and Allen, architects and surveyors, Dacre House, Arundel-street, W.C.

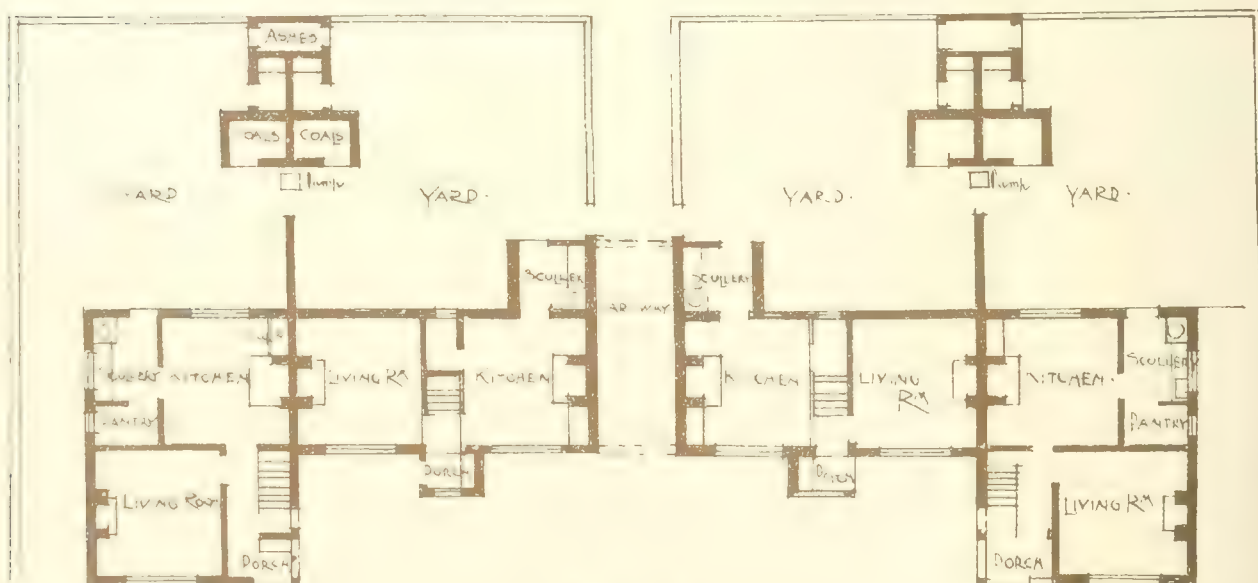
The Presbyterian congregation, which for many years worshipped in Black-street, Newcastle-on-Tyne, held services for the first time on Sunday in the lecture-hall of the new buildings now being erected in the College-road, Barras Bridge, Newcastle. Some time ago the congregation sold the Blackett-street edifice. It is expected the new buildings will be completed by the end of the present year. The lecture-hall is built of stone, and has a frontage of three stories, which contain session-room, vestries, cloakroom, and other apartments. A corridor leads to the lecture-hall, a room holding 600 persons. At the Elton-street end of the hall there is a platform with vestries behind. Electric lights are supplied, as well as a heating apparatus. A pitch-pine dado runs round the room, and the fittings and the roof are of the same material. Messrs. Badenoch and Bruce, of Newcastle, are the architects, and Mr. G. Mauchlen is the contractor.

A meeting of the Edinburgh Architectural Society was held on Wednesday, March 27, when Mr. Wm. Scott Morton gave a lecture upon "Helps and Hindrances to the Development of Design." Mr. Scott Morton referred to the laws and limitations in form and colour of design, and the scope for its expression. Some public hindrances to good design were mentioned, and what for designers was the most profitable line of study. A number of line-height views were shown.

The total amount realised in the three days' sale of the Duke of Beaufort's Monmouthshire estates was £36,000. The ruins of Monmouthshire Castle received no offer.

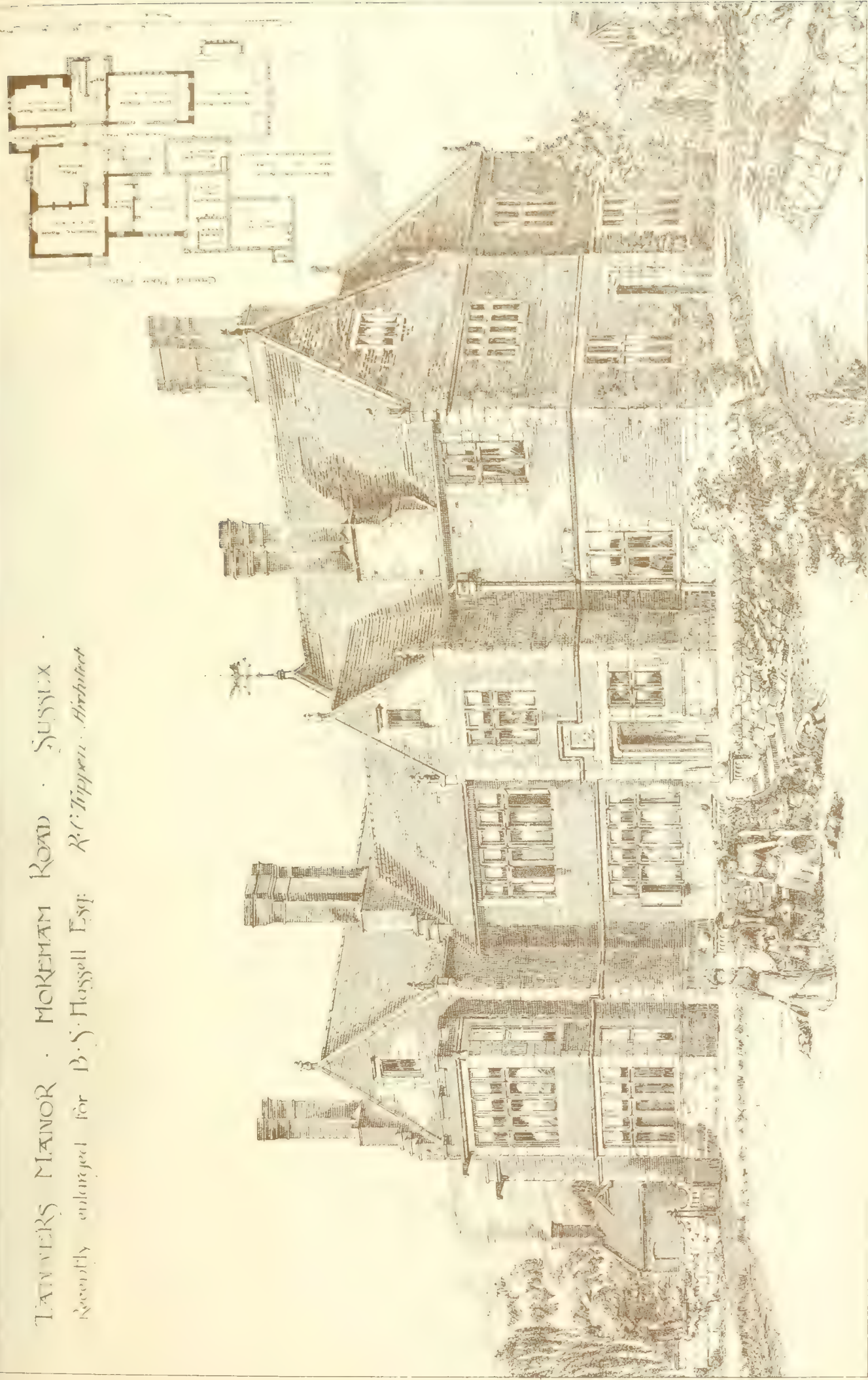
The trustees of the late Mr. Macdonald, of Kepplestone, formally handed over to the corporation of Aberdeen, on Saturday, the important collection of paintings bequeathed to the art gallery of the city by that gentleman. In addition to the collection, the trustees will very shortly have to hand over to the town, as a third of the residue of the estate, a sum for investment of between £16,000 and £17,000, the interest of which has to be accumulated for a certain period, and then expended on pictures and other works of art, so as to be adding continually to the collection bequeathed. To the original collection Mrs. Macdonald has added nineteen oil paintings, all except one portraits of artists, two bronzes, and a marble bust of Mr. Macdonald on a granite pedestal.

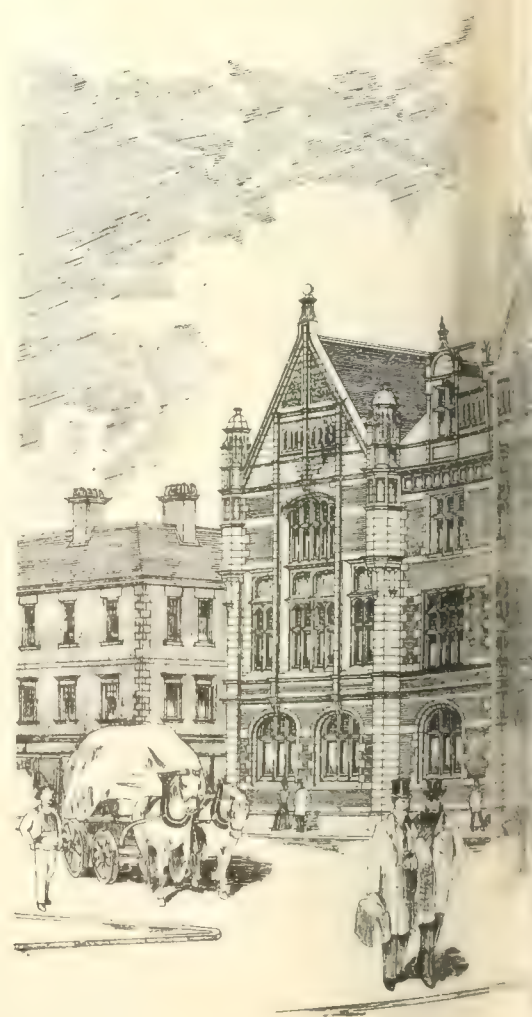
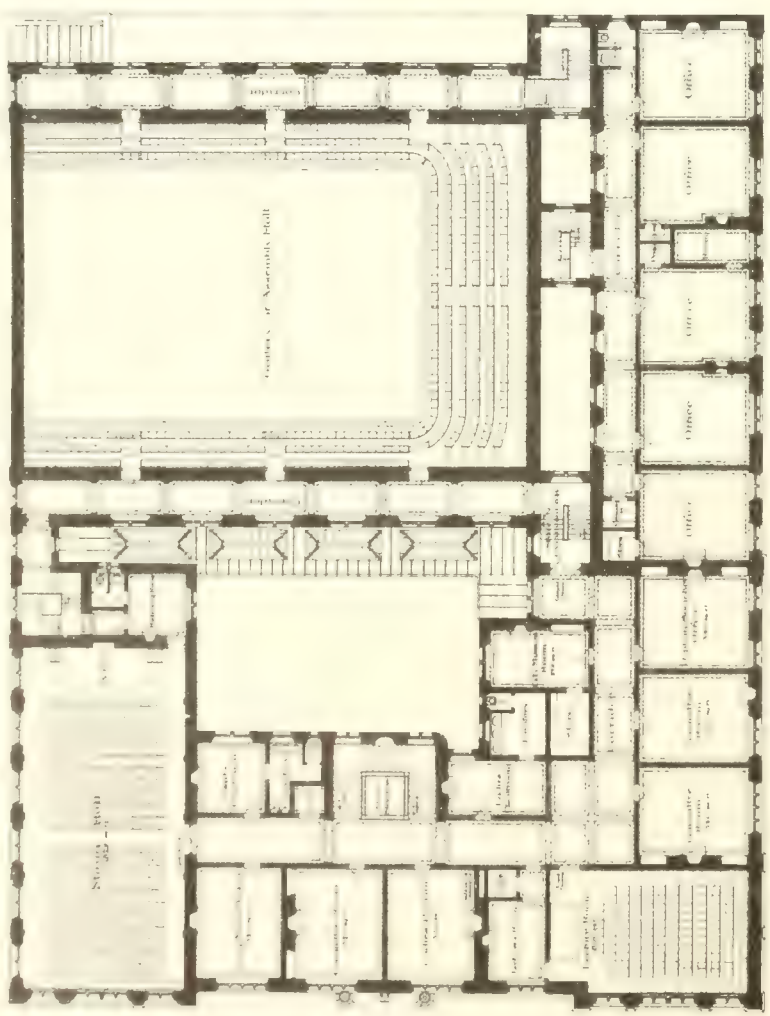
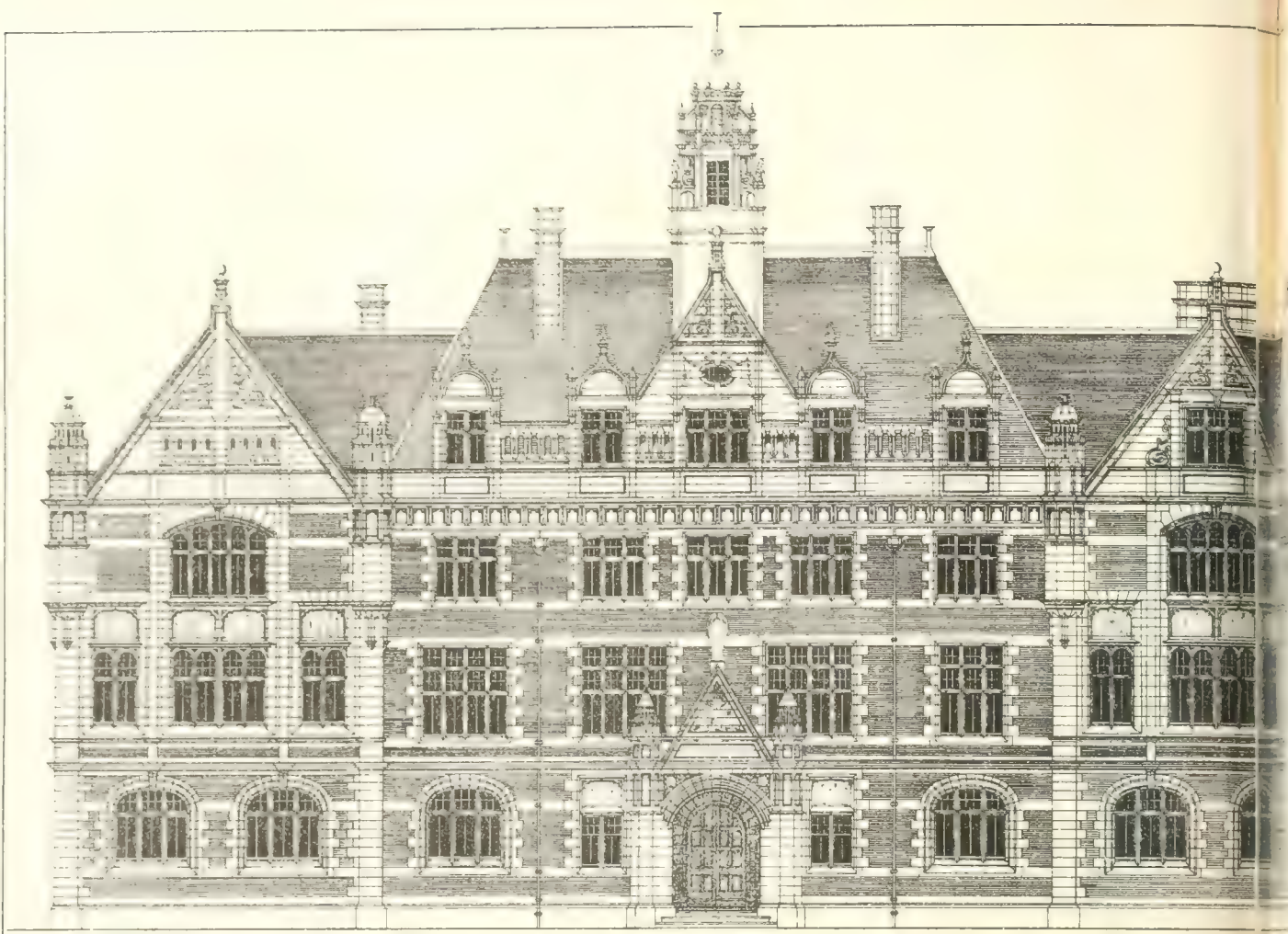
A large clock is now being erected in the parish church of Cold Overton, near Oakham. It is fitted with all the latest improvements, and is to the designs of Lord Granthorpe. There is one dial facing south, and a larger one facing east, and the hours are struck upon the largest bell. Messrs. John Smith and Sons, Midland Clock Works, Derby, are carrying out the work.



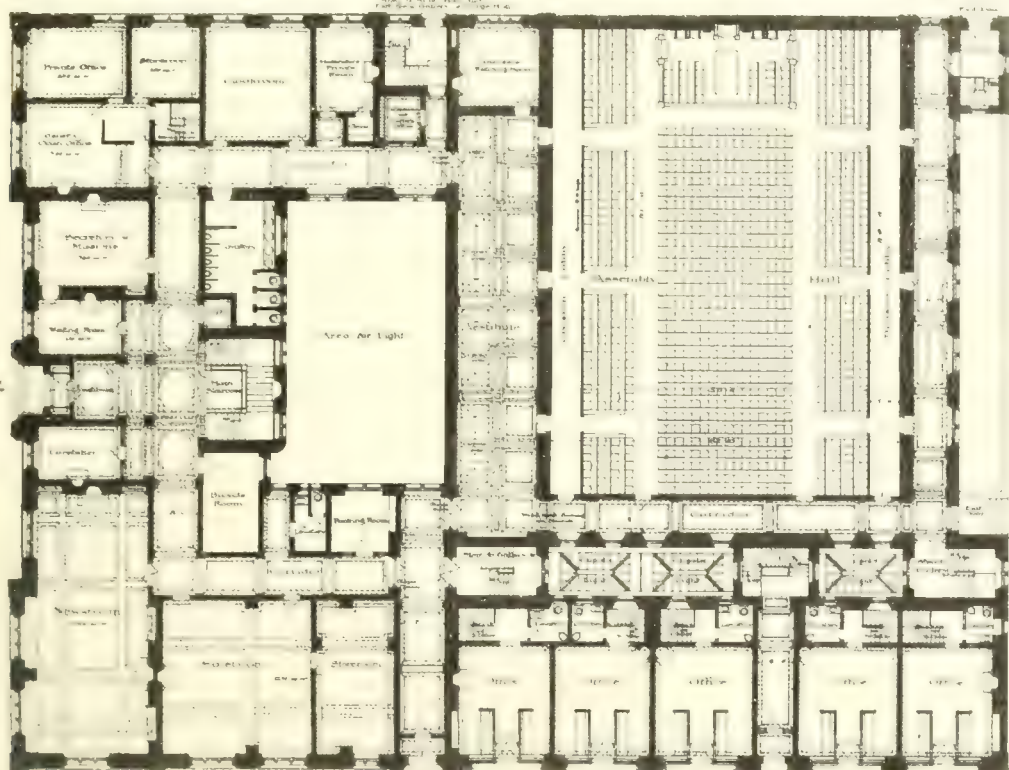
THE THREE ALMA HOUSES NOTTINGHAM. AN ALBERT ARCADE

TATNERS MANOR · MOKEMAM ROAD · SUSSEX
 Recently enlarged for B. S. Haggell Esq. R. C. Tappan Architect





WELLINGTON STREET



BELFAST ASSEMBLY HALL. THIRD PREMIAED DESIGN. W. C. LAIDLAW ARCHT.





KIRBY HALL NORTHAMPTS

JOHN · THORPE · ARCHITECT · 1570 · 1575
REMODELLED · BY
INIGO · JONES · ARCHITECT · 1638 · 1640

JAMB TO
PORCH

BASE · TO
COLUMNS
SECOND
STOREY

BASE · TO
PILASTERS
WINDOW

STRING
UNDER

IMPOST · TO
WINDOW

PLAN · THRO'
PEDESTAL

PLAN · THRO'
PILASTERS

FRONT · ELEVATION
PORCH · ENTRANCE

DETAILS · OF · DO

· KIRBY HALL · NORTHAMPTON

ORNICE
2f. GALLERY

DETAILS

CORNICE · TO
GREAT · HALL

NOTE THE SLATES WERE OBTAINED FROM PITS ABOUT HALF A MILE DISTANT AND ARE ON THE KIBBY ESTATES

NOTE THIS ROOF IS IN A VERY
DILAPIDATED CONDITION
AND MAY BE EXPECTED
TO FALL AT ANY TIME

CLASTED

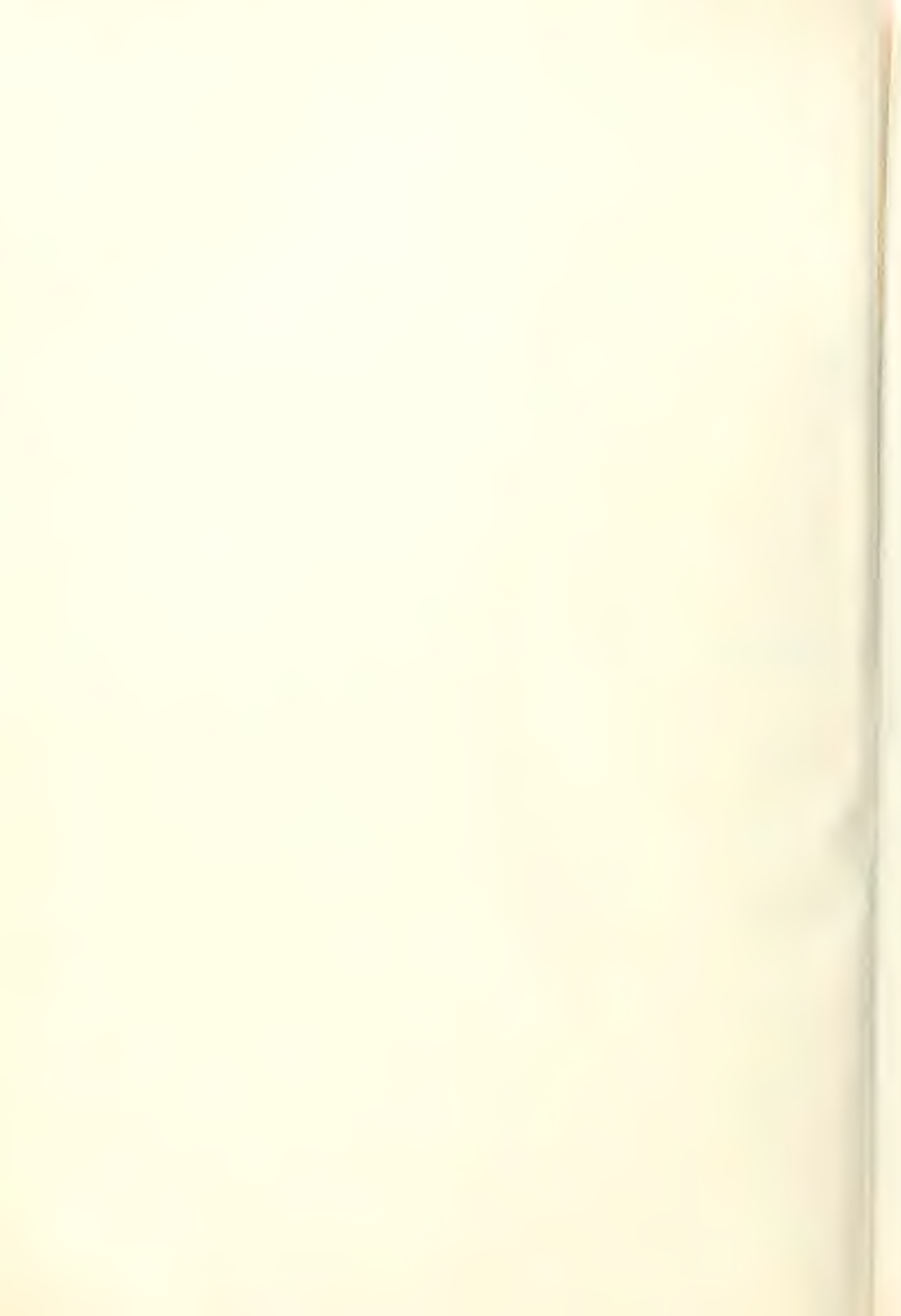
NOTE: THE ARMS AND CRESTS TO
BRACKETS HAVE BEEN
REMOVED

NOTE THE WHOLE
OF THE PANELING
IN MUSEUM
GALLERY HAS
BEEN WHITEWASHED

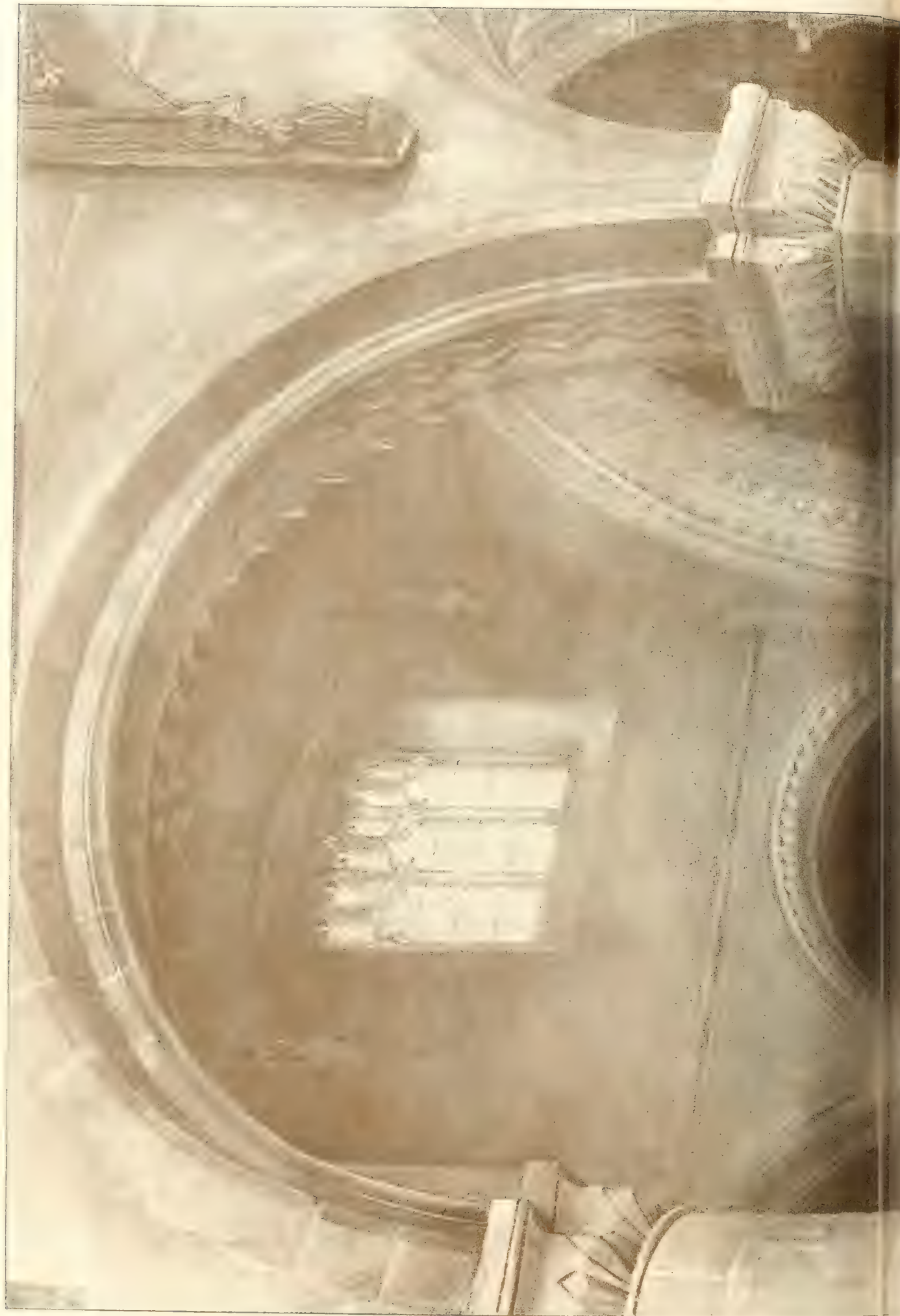
SECTION

SECTION · THRO' · GREAT · HALL
SHEWING · MINSTREL · GALLERY

STAFFORD
SHIRAZ
KNOT



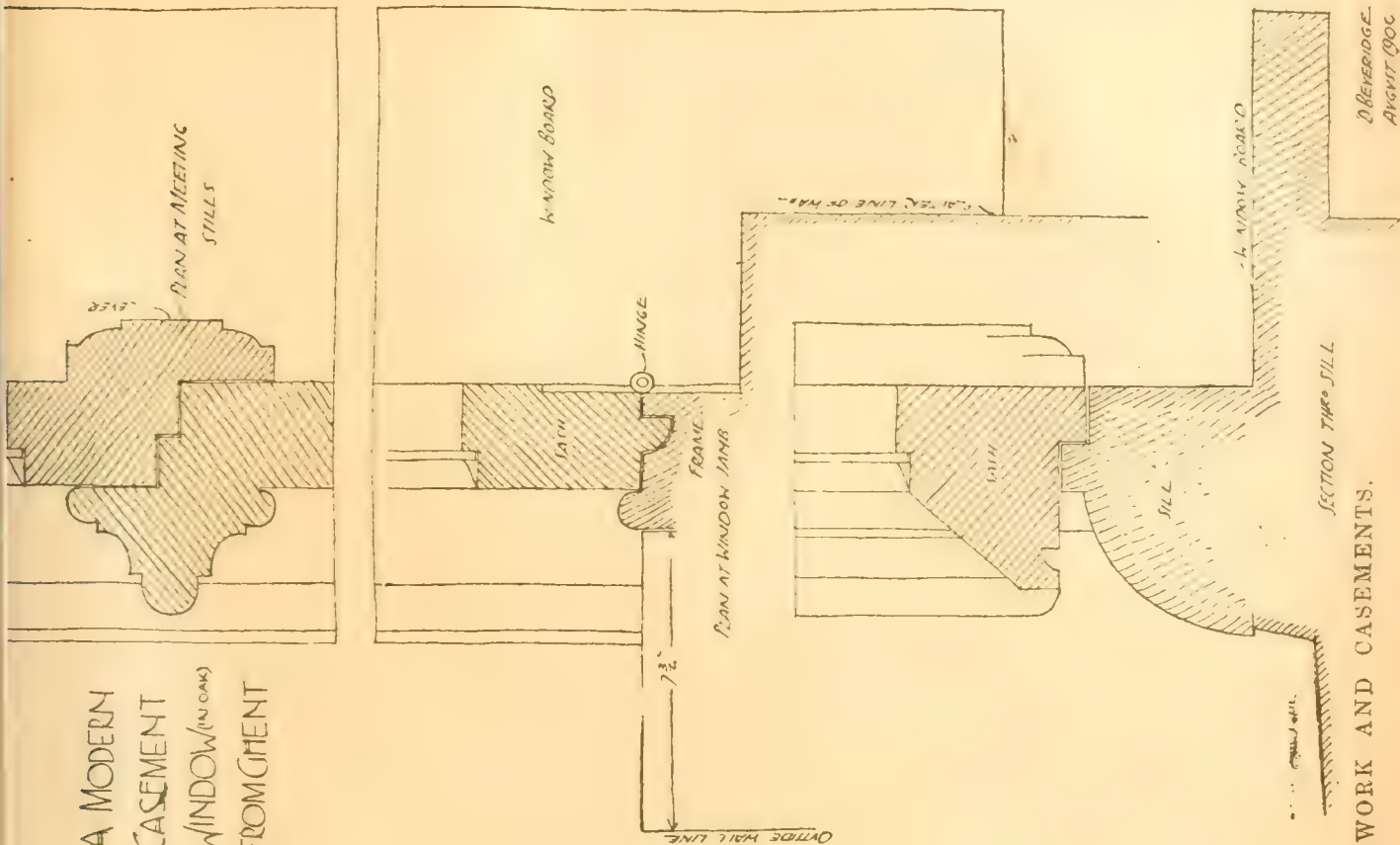






INTERIOR OF WALSOKEN CHURCH • NATIONAL SILVER MEDAL PAVILION • MAP 11-K

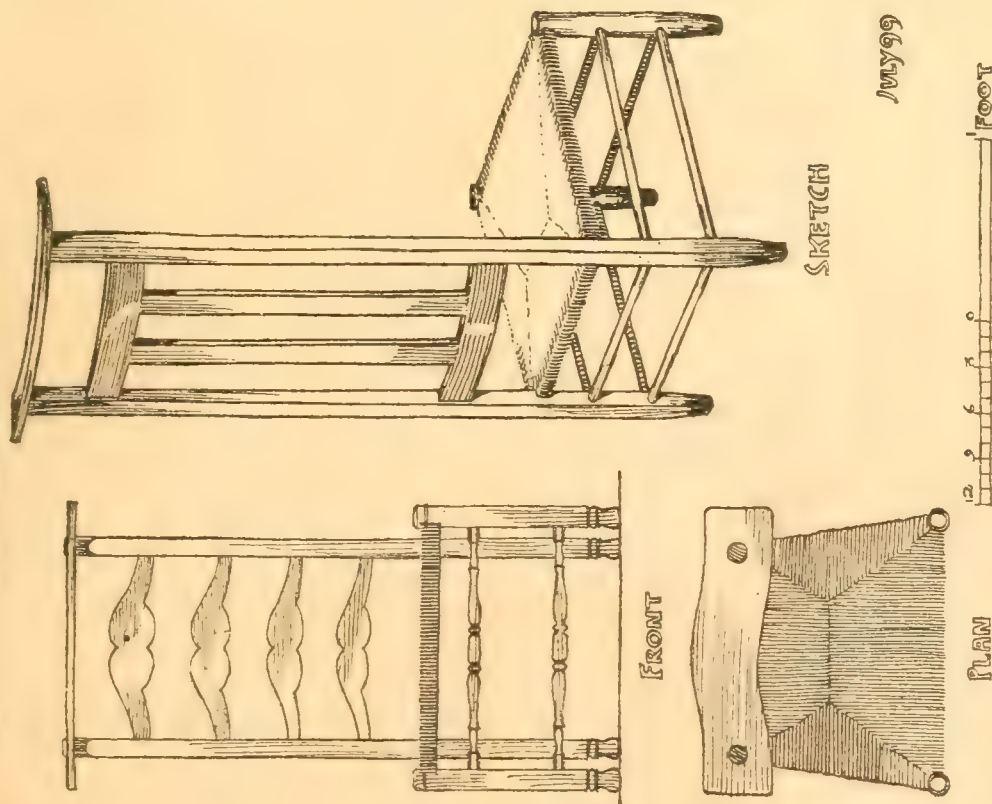
A MODERN
CASEMENT
WINDOW (IN OAK)
FROM GHEENT



SKETCHES OF BELGIAN WOODWORK AND CASEMENTS.

D. BEVERIDGE.
ARCHT 1900

TWO CHAIRS FROM NOTRE DAME
DES VICTOIRES BRUSSELS.



JULY 99

FOOT



LEGAL INTELLIGENCE.

W. FREEMAN, K.C., said his client, Mr. J. W. Davies, had purchased for £1,000 the goodwill, subject to making

trade down to 1893, when the landlord took the premises, and they removed to No. 31, Catherine-street, Strand, in connection with the Strand improvement scheme. Mr. Freeman, K.C., said his client had spent £2,000 in the erection of a strong room and fitting-up the place. In 1893 they were granted a 50 years' lease, the rent for the first 25 years being £160 a year, and £200 a year for the remainder of the term. Mr. Freeman, K.C., said his client had been carrying on a pawnbroker's business. His claim was made up as follows:—£1,320 of stock, £1,320; cost of temporary premises, removal, &c., £1,270—total, £7,127. Mr. J. W. Davies, one of the claimants, in cross-examination by Mr. Boyle, admitted that he could not produce any document showing that he had been carrying on a business of fitting up the premises. He added that he had 15,000 pledges in hand, and his stock was worth £3,300. Mr. Boyle contended that if Messrs. Davies were awarded £1,900 they would be amply compensated. At the close of the evidence the jury awarded the claimants £3,462.

Justice Cozens-Hardy last week, R. G. Marchant was, from December 31, 1798, until January 17, 1901, the owner in fee of two plots, being 113 and 112, together with the half of the road to the plaintiff, J. Hedley. From November, 1899, the defendant, S. Webb, had been the owner of the adjoining plot, numbered 112, together with half the road in front of it, and on this plot he had erected a pair of semi-detached houses. In the same month he laid down two sets of pipes from the water-closets of his two houses, which ultimately joined and ran into one common conduit which was connected with the sewer in Park Hill-road. This connection with the sewer was in front of plot 113, and now belonged to the plaintiff. The plaintiff claimed a declaration that the defendant was not entitled to drain his premises through the plaintiff's premises, an injunction to restrain him from permitting the connection to remain, and an order for removal of the same. The defendant contended that his two houses were two buildings within the meaning of the Public Health Act, 1875, and therefore that, from the point of junction of the pipes from the houses to the sewer, the conduit was itself a "sewer" within the meaning of the Act, and that, being a sewer, it was now vested in the local authority. The plaintiff, on the contrary, argued that the two houses were only one building, and that the conduit was only a drain, but that, whether it was a sewer or a drain, the defendant could not by what was a trespass and an unlawful act deprive the plaintiff of his rights in his own land. Mr. Justice Cozens-Hardy, in giving judgment, said that what the defendant had done was *prima facie* a trespass; but it was said to be justified in several ways. First it was said that Marchant, the plaintiff's predecessor in title, had acquiesced in the making of the connection through his land, but there was no evidence of that. Then it was said that the culvert from the pair of detached houses was not a drain, but a "sewer" within the meaning of the Public Health Act, and was vested in the local authority, and that the plaintiff had no right to interfere. Apart from authority, this was the case of the drainage of one building only. A structure might be one building, whether it was occupied by one or more person or persons, and whether in flats or not. The term "one building" was not equivalent to the term "one house." A pair of semi-detached houses might be one building only. In *Kershaw v. Taylor*, 1895, a Divisional Court held that from the point of junction the culvert was a sewer, and not a drain within the Metropolis Local Management Act, but there the drainage came from two separate pairs of semi-detached houses. In the present case, however, it was held that a pipe receiving the drainage of more than one "building" was a sewer within the meaning of the Public Health Act; but in the present case the erection was only one building, although it consisted of two semi-detached houses, and the drainage came from the two houses, the plaintiff's land, was not a sewer. But even if it was a sewer, there would be a further difficulty, as to which, as at present advised, his Lordship was against the defendants. Could a man by making a culvert wrongfully on another man's land without his consent make it a sewer, so as to vest it in the

local authority, and have the property from the owner of the land? The observations of Mr. Justice Chitty and the Court of Appeal in *Meader v. West Cowes Local Board* (1892), were against the defendant on this point. Webb could not by a trespass on the plaintiff's own land make something a sewer, so as to vest the property in the local authority. It was held that the defendant was not entitled to drain through the plaintiff's premises, and ordered the defendant to take up and remove the drain complained of.

WAGES IN CROYDON DISTRICT. The cases of "Powell v. Hanscomb and Smith" and "Purkiss v. 'same'" came before Judge Russell at the Croydon County-court on March 26. Plaintiffs, bricklayers' labourers belonging to the United Labourers' Union, sued the defendant builders, carrying on business at Croydon, for difference in wages paid at 6½d. per hour and 7d. per hour demanded. Mr. Gardiner, instructed by their Union, appeared for the plaintiffs, and the defendants were represented by Dr. Newnham, LL.D., under instructions from the Croydon and District Master Builders' Federation. It appeared that Powell had been engaged on the defendants' works for two weeks and one day, and Purkiss for a few days only, both the men being started by the foreman of works without any specific agreement as to the wages paid. The foreman gave evidence to the effect that the only time 7d. per hour was mentioned by plaintiffs before dismissal was when Powell approached him with a view to taking over the scaffolding at an increased rate of ½d. per hour. He also produced defendants' wages book, showing that the whole of the remaining labourers on the works were receiving 6½d. per hour. Plaintiff's solicitor asked witness whether the London rate of 7d. per hour was not generally paid in Croydon on account of the town coming within the twelve-miles' radius, as fixed by the London Master Builders' Association and the workmen's unions? But witness stated that, after many years' experience as a builders' foreman for the largest firms in the town, he had never known a labourer's wages to be more than 6½d. per hour. Messrs. S. Page and D. Waller, builders, of the town, and Mr. E. J. Fairchild, secretary to the Federation, gave evidence as to the trade custom of setting-on and payment, and also to prove that the before-mentioned arrangement as to the radius had never been acknowledged by the Croydon builders, who have an entirely independent organisation, comprising all the most important firms in the district, and whose maximum rate of wage for all trades has always been ½d. per hour less than the London union rate. The names of John Tidy and Messrs. Wadham and Waters were put forward by the plaintiff's solicitor as firms for whom Powell had previously worked in the town at the higher rate: the first was proved to be a piecework bricklayer or sub-contractor, and the others the well-known firm of electrical engineers. His Honour held that Powell, from the fact that he worked at the lower rate after receiving his wages the first week, had in effect agreed to it, and that both he and Purkiss, not inquiring as to the rate paid in the works, was therefore set on by the foreman in accordance with the usual custom, and entitled to the same rate of payment as other labourers in the district, which he held the evidence had conclusively proved to be 6½d. per hour. He therefore gave judgment for the defendants in both cases. The defendants' solicitor stated his clients did not ask for costs.

ROUGH AND READY FLOORING FOR WOOD BLOCKS.—Mr. Commissioner Kerr delivered a considered judgment on March 28 in an action brought by the Medway Navigation Company (Limited), 139, Queen Victoria-street, against the Acme Wood Flooring Company (Limited), Gainsborough-road, Victoria Park, for £71 5s. for freight. The plaintiffs' case was that they were the owners of the steamship *Test*, which was chartered by the defendants, who in the early part of October loaded her with 580 tons of Yarraah wood blocks. She proceeded from the Victoria Dock to Liverpool. The ship was loaded with the 580 tons of blocks, but they were not weighed when put on board. They were simply dropped into the hold. When the ship arrived at Liverpool on October 27, the cargo was taken out and piled up on the quay. Then the Corporation of Liverpool, to whom the blocks had been consigned, sent for them in carts. The defendants had paid £190, and they now refused to pay the balance sued for because they said that only 507 tons of blocks arrived. The defendants had paid £40 into court since the action was started. The defendants' case was that they had paid freight for all the blocks carried. The plaintiffs had only carried 507 tons, and the defendants had had to send the rest of the cargo by railway at considerable cost. The plaintiffs replied that no one weighed the wood as it was put on board, but the captain was satisfied by the draught of the ship that he had 580 tons in her. The defendants showed that that was just what she had not. Mr. Commissioner Kerr, at the trial, said that the question for him to determine was whether the plaintiffs' captain had the duty cast upon him of seeing whether he had the 580 tons or not. Both

the plaintiffs and the defendants were to blame in not having a tally kept as the blocks were put into the ship. The next time the plaintiffs took a charter they must agree to weigh or count. In delivering his considered judgment, the learned Judge said that the captain was apparently misled by his ship's marks as to the quantity of blocks he had in her. He came to the conclusion that he had his full quantity on board, but that was a wrong conclusion to come to. The defendants were justified, under the circumstances, in refusing to pay the freight on the blocks which the plaintiffs had not carried. There must be judgment for the defendants, with costs.

CHIPS.

Owing, through a printer's error, to its being inserted under the wrong heading last week, the advertisement of the Harrow U.D. School Board may have been overlooked. We would, therefore, call the special attention of architects to it in this issue.

On Friday, at the town-hall, Yarmouth, an inquiry was held by Lieut.-Colonel A. C. Smith with regard to an application to the Local Government Board for a loan of £7,500 for improvements at Gorleston. It was explained that it was intended to continue the existing cliff improvement by the addition of a strip of cliff 2,394ft. long, the top of which would be laid out with grass, for use as a public promenade, while at the foot a concrete retaining wall would be built, which would contribute to shore protection. A further application was made for £2,580 for paving purposes.

A new tower screen has been placed in Rochdale parish church. It has been worked by Mr. Henry Hoyle from the design of Mr. F. P. Oakley, the church architect.

Colonel Durnford, R.E., an Inspector under the Local Government Board, held an inquiry at the town-hall, Cleckheaton, on Friday relative to applications made by the district council for powers to borrow £25,000 for purposes of electric lighting and the provision of refuse destructor, and £120 for the purchase of land at Hartshead Moor for the purpose of a depot.

The Whitehaven Board of Guardians have unanimously agreed to build a workhouse infirmary at a cost of £8,112.

The Board of Trade have, after modification, confirmed an order made by the Light Railway Commissioners, and entitled the Cleobury Mortimer and Ditton Priors Light Railway Order, 1901, authorising the construction of a light railway in the county of Salop from Cleobury Mortimer to Ditton Priors.

New schools erected at Stockfield by the Broomley and Bywell School Board was opened on Saturday. The site is near the railway station, and the accommodation provided is for 286 children, although the plans have been so arranged as to provide facilities for future enlargements. The general contractors were Messrs. Davison and Bolam, of Blaydon. The work has been carried out from the designs and under the superintendence of the architect, Mr. J. W. Rounthwaite, A.R.I.B.A., of Newcastle-on-Tyne.

The town council of Stafford have received a letter from the Local Government Board sanctioning the loan of £6,500 for the erection of working-class dwellings in Crooked Bridge-road, and the appropriation of land belonging to the corporation as a site, the term of repayment to be 40 years.

On Thursday in last week Mr. J. W. Bradley, borough surveyor of Wolverhampton, was appointed surveyor to the new corporation of Westminster. There were 500 candidates, and the number was reduced to three, Mr. Bradley being appointed at a salary of £1,000 a year, rising to £1,200 in three years. Mr. Bradley went to Wolverhampton, where his salary was £100 a year, six years ago from Nelson, Lancashire.

The Mersey Docks and Harbour Board have resolved, on the recommendation of the Works Committee, to construct a new graving dock at an estimated cost of £136,000. The new graving dock, which is to be constructed on the site of the South Carriers Dock, one of the old obsolete docks at the south end of the Board's estate, is to be 720ft. long and 100ft. wide.

At a meeting on Friday of the Ludlow Town Council, a report having reference to the electric lighting of the town, which had been prepared by Mr. John Parker, city surveyor of Hereford, was adopted. The cost of the proposed installation, it was mentioned, would be £7,350.

A portrait of Queen Victoria in stained glass made about fifty years ago by Wailes, from the old house in Shieldfield, Newcastle, where the late Lord Armstrong was born, has been presented to the Antiquarian Society of Newcastle-on-Tyne by the North-Eastern Railway Company (per Mr. G. Irving).

Our Office Table.

THE sad and mysterious death, fourteen months since, of Mr. Horace James Brydon, son of Mr. James M. Brydon, V.P.R.I.B.A., was referred to in the Probate Court on Friday last, on a motion for leave to swear death. Mr. Priestley mentioned that Mr. Brydon was an electrical engineer engaged on the construction of electric tramways in Dublin. In August, 1899, his wife had returned to England for her confinement, and from time to time Mr. Brydon came over to see her in London, where she was residing with her mother. On February 10, 1900, he left Dublin by the London and North-Western Railway Company's steamship *Maestor*; but when the ship arrived at Holyhead Mr. Brydon had disappeared, and there was not the slightest doubt that he must have fallen overboard, as there was a heavy sea running and a snowstorm raging at the time. Mr. Brydon's luggage was found on board, but of the seven first-class tickets issued that night only six had been given up. The deceased was insured for £400 in the Atlas Assurance Company, who had been served with notice of this motion. Mr. Justice Gorell Barnes gave leave to swear the death on or since February 10, 1900, subject to the filing of a further affidavit verifying the notice to the insurance company.

THE Building Trades Exhibition, which opens on the 17th inst. at the Royal Agricultural Hall, and remains open until the 22nd inst., will be the largest and most representative in point of exhibitors of its kind. Every foot of the ground-floor space has been allotted. Special sections are this year being devoted to fire prevention and smoke abatement. Visits to the hall, as in previous years, will be paid by professional institutions interested, the dates of which will be given in next week's issue. Lord Wolsley has been prevented from opening the exhibition owing to the fact of his being sent as ambassador to foreign courts; but Lord Roberts has kindly consented to pay the exhibition a visit between the dates above named.

THE Bishop of Winchester has addressed to the Lord Mayor of London a letter setting forth the reasons why the Diocesan Trustees of Wolsley Palace cannot concur with a letter from his lordship, on behalf of the Central Association for the Celebration of the King Alfred Millennium, advocating the acquisition of the ruins of Wolsley and a portion of the adjoining grounds by the corporation of Winchester. Dr. Randall states that so far from the ruins having "for long been gradually and apparently crumbling away," a considerable expenditure has been recently incurred by the Ecclesiastical Commissioners, under the advice of specially competent advisers, in securing the preservation of the ancient walls. Indeed, but for the fact that these ruins were happily under the custodianship of the Ecclesiastical authorities, they would probably have long since shared the fate of the ancient walls and gateways belonging to the City of Winchester, which, with the exception of the Westgate and Kingsgate, have wholly disappeared. The Bishop explains that the area of the ground is but twelve acres, of which the only portion that could be converted into recreation ground is less than four acres in extent, and adds that all persons who wish to visit the ruins are freely admitted to them under reasonable restrictions.

FINALLY Dr. Randall demolishes the tradition that at Wolsley King Alfred was educated and held his court by showing that there is no historical evidence to support these claims. He says:—"The present ruins of Wolsley are the remains of a castle fortified by Bishop Henry in 1138, which continued to be one of the chief residences of the Bishops of Winchester until it was dismantled by the Parliamentary forces in the civil war of the 17th century. The present house was built by Bishop Morley, the second Bishop after the Restoration. Thus the castle and the whole of the adjoining grounds inclosed by their ancient wall, outside the city, have been episcopal property for nearly 800 years. The associations of the spot with King Alfred are slight and shadowy, depending, at the best, upon probable inference only. At any rate, none of the buildings are of his time. On the other hand, the connection of the castle and the grounds with the episcopal see has been continuous from the 12th century to the present day, and the associations of the place with a long line of illustrious prelates are full of interest."

THE election of a Slade Professor of Fine Art will be held at Cambridge on Saturday, May 11. The professor is elected for three years. He receives a stipend of about £340. He is not required to reside. He is to deliver annually in the University a course of not less than twelve lectures on the history, theory, and practice of the fine arts. The lectures must be delivered in full term and free of charge as regards members of the University. The outgoing professor is eligible for re-election. The electors are the Vice-Chancellor, Mr. Austen Leigh (Provost of King's), Sir Richard Jebb, Regius Professor of Greek, Dr. Sandys, the Public Orator, the President of the Royal Academy, the President of University College, London, and the Director of the Art Museum, South Kensington. Candidates are requested to send their names to the Vice-Chancellor on or before May 3.

THE burgh engineer of Edinburgh has reported on the development for building purposes of the Lochend and Craigintinny Meadows, and forecasts that the area may in time become a "salubrious seaside resort." For years this ground, which is situated in a triangle formed by Edinburgh, Leith, and Portobello, has been for building purposes looked upon with suspicion, but recent events rather tend to dispose of such a prejudice. It has a frontage to the Firth of Forth, is surrounded on all sides by both the North British and Caledonian Railways, and is immediately in touch with the Edinburgh tramways on the Portobello-road and the Leith tramways by Seafield. According to the feuing plan of the Craigintinny estate it is intended that there should be streets running south from Seafield, and from the vicinity of the crossing on the Leith and Portobello-road to the Edinburgh and Portobello-road. Already great changes have been effected on the appearance of this district by the extensive building operations begun on the Edinburgh and Portobello-road, and the erection of blocks of dwelling-houses at the Portobello end of the meadows, and at the Seafield corner, undertakings which have so far proved commercially successful. This seems to show that the area will probably become within the next few years a profitable field to the builder. With the sweeping away of all the irrigation works between Edinburgh and the sea, and with the foreshore as a continuation of the Portobello promenade up to the Leith boundary, an ideal seaside resort would at once be provided for the city. The centre portion of the property might, it is suggested, be reserved for pleasure grounds, while, in large measure, to recoup themselves for the capital cost the corporation could sell or feu the surrounding portions. In course of time it is anticipated that the neighbouring Leith and Portobello-road will become one of the most attractive drives on the shores of the Firth.

DRAFTS of two new sets of by-laws were considered by the Liverpool City Council on Wednesday. One lot has reference to new buildings, ashpits, and the removal of house refuse; and it is therein provided, with respect to the structure of foundations for new buildings for securing stability and for purposes of health, that every person erecting a new domestic building shall cause the whole ground surface or site to be properly asphalted with natural asphalt on a suitable foundation, or to be covered with a layer of good cement concrete, at least 4in. thick. Provision is also made with regard to bringing the site up to the level of the surface of the ground immediately surrounding and adjoining it; and as to ventilation it is set forth that six inches of space must exist between the surface of the site and the floor, such space to be thoroughly ventilated by means of suitable and sufficient air bricks, or by some other effectual method. The other by-laws have reference to locomotives, and it is provided that a person in charge of a traction engine, or other locomotive, shall not use it between the hours of 7 a.m. and 12 midnight, on certain main highways on account of their being crowded.

LAST week, says the *Malland Mail*, we related how the humorists of the War Office went to arbitration because the owner of land required for barracks at Woking asked £533 more for it than the surveyor of the W.O. valued it at, and let us in for three times the price required for the land in the first instance. Now we have another little joke from the same department, funnier still. Some barrack building was being done at Malta, and the Royal Engineer officers, who were acting as architects, were instructed to give certificates to the contractor from time to time to the extent

of 75 per cent. of the value of the work done. While the work was still in progress they had issued certificates to an amount which exceeded the total of the contract by £344 17s. 9d., and some other official paid the money. In the auditor-general's report nothing is said about the cash having been recovered. We know one or two builders whose mouth will water for the opportunity of doing some work for the War Office, with those same engineer officers as architects, when they read this.

MESSRS. HARTMUTH'S pencils are well known and justly appreciated by architects, so that in introducing the same firm's "Kohinoor" tracing-cloth to the attention of our readers little recommendation is necessary, the name of the makers furnishing a guarantee as to its excellence. The cloth is of even texture, and proves itself thoroughly tough and durable, is easy to work on, and, being transparent, is adapted to all the usual purposes for which cloth of this kind is required. The pliability of the material renders it devoid of the harshness peculiar to some tracing-cloths, and it is not spoiled by an excessive glaze. It has found favour in America, and among the testimonials secured in consequence of its use in the Bureau of the United States Navy, the Chief Constructor at Washington has expressed the entire satisfaction of his department with the experience of the "Kohinoor."

THE secretary of the Fine Art Society writes that at the present time it is impossible to get good picture glass of English production, no matter what price is paid for it. English plate-glass, which had until recently the first place in the world for quality, has, he asserts, been continually deteriorating, until it has now lost all its brilliancy and whiteness, and all that is produced is of a bottle-green colour. Complaints are constant from artists and the public as to the appearance of pictures and water-colours which glazing with glass of this colour produces, and the brunt of these has to be borne by those who are framemakers, and not by the makers, who are callous to complaints. As a result, those who require glass of good colour have to go to Belgian and French sources, one of which is certainly tainted with suspicions as to whether the glass is not chemically unfitted for use upon valuable works of art. The amount of glass which is used in this country for the purposes above named must be a large one, and the trade worthy of being retained in this country; but this the makers do not seem to appreciate.

THE recent fall of stones at Stonehenge having led to much public discussion, Sir Edmund Antrobus, of Amesbury Abbey, Wiltshire, invited the Society of Antiquaries, the Wiltshire Archaeological Society, and the Society for the Protection of Ancient Buildings, to advise him with regard to the better preservation of the famous monument. A committee representing these three bodies met on the 26th ult., under the presidency of Viscount Dillon, the President of the Society of Antiquaries, at which meeting the following, among other, resolutions, were passed:—(1) That this committee approves of the suggested protection of Stonehenge by a wire fence not less than 4ft. high, following by two sides the existing roads, and crossing on the west from the 331ft. level on the north road to the 332ft. level on the south road shown on the Ordnance Survey map. (2) That the committee recommends, without prejudice to any legal question, that the local authorities be requested to agree to divert the existing trackway or ridgeway from Netheravon, now passing through the earth circle, so as to pass from the 302ft. level to the 331 and 332ft. levels in the Ordnance Survey map immediately west of Stonehenge. (3) That stones 6 and 7, with their lintel, and stone 56, according to the numbering on Mr. Petrie's plan, be first examined with a view to maintaining them in a position of safety. (4) That in the opinion of this committee stone 22 should be replaced, stone 21 be made safe, and the lintel of 21 and 22 be replaced in the most safe and conservative manner. The committee also recommend the re-erection of stones 57 and 58 and their lintel 158. (5) That the instructions to custodians already in force be approved with a few suggested alterations."

THE Norwich City Council have adopted Part 3 of the Housing of the Working Classes Act, 1890, and have decided to lease for 999 years from the Ecclesiastical Commissioners 25 acres of land near Silver-road and 7 acres in Angel-road.

LATEST PRICES.

IRON, &c

	Per ton.	Per ton.
Rollad-Iron, Joint, Bohem	46 0 0	26 10 0
Rollad-Steel Joint, English	9 0 0	10 0 0
Wrought-Iron Under Plate	9 0 0	9 15 0
Flat Iron, good Flat	8 7 6	9 7 6
Bar, Lowman Flat, Round, or Square	20 0 0	20 0 0
Bar, Welsh	5 15 0	5 17 6
Boiler Plates, Iron		
South Staffs	7 17 6	8 5 0
Best Saeckhill	13 0 0	13 10 0

Angles 10s., Tees 20s. per ton extra.
Builders' Hoop Iron, for bonding, &c., £6 15s.
Builders' Hoop Iron, galvanised, £15 10s. 6d. per ton.
Galvanised Corrugated Sheet Iron

		No. 18 to 20.	No. 22 to 24.						
6 ft. to 8 ft. long, inclusive	Per ton.	£12 5 0	£12 10 0						
Best cutts	Per ton.	12 15 0	13 0 0						
Cast-Iron Columns	Per ton.	29 0 0	29 0 0						
Cast-Iron Stanchions	Per ton.	9 0 0	9 0 0						
Rollad-Iron Fence Wire	Per ton.	10 5 0	10 0 0						
Rollad-Steel Fencing Wire	Per ton.	8 5 0	8 15 0						
Cast-Iron Sash Weights	Per ton.	9 5 0	10 0 0						
Cut (1 1/2 p. Nails, 3 in. to 6 in.)	Per ton.	7 5 0	8 0 0						
Cut (1 1/2 p. Nails, 3 in. to 6 in.)	Per ton.	12 0 0	13 0 0						
Cut (1 1/2 p. Nails, 3 in. to 6 in.)	Per ton.	11 15 0	12 15 0						
Wire Nails (Points de Paris)—									
0 to 7	8	9	10	11	12	13	14	15	P.W.G.
2 1/2	10	13	16	19	22	25	28	31	per cwt.

Cast-Iron Socket Pipes—		
3in. diameter	£6 17 6	to 47 5 0
4in. to 6in.	6 15 0	„ 7 0 0
7in. to 24in., all sizes	6 15 0	„ 7 0 0

Coated with composition, 2 s. 6d. per ton extra; tinned and leaded joints, 5s. per ton extra.

Fig Iron	Per ton.
Cold Blast, Lilleshall	105s. to 110s.
Hot Blast, ditto	57s. 6d. to 62s. 6d.
Wear, Blast, & Tools, and Fittings	Discount off Standard

Gas-Tubes	70 p.c.
Water-Tubes	65 "
Steam-Tubes	100 "
Galvanised Gas-Tubes	60 "
Galvanised Water-Tubes	55 "
Galvanised Steam-Tubes	50 "

	10wt. casks.	5wt casks.
	Per. ton.	Per. ton.
Zinc, English-London null ..	£23 10 0	to £21 0 0
Do., Vieille Montagne	24 0 0	24 10 0
Sheet Lead, 3lb. per sq. ft. super. ..	17 0 0	18 0 0
Pig Lead, in cwt. pigs	13 15 0	14 15 0
Lead Shot, in 28lb. bags	19 0 0	21 0 0
Copper Shot, shelling and rods ..	87 10 0	88 0 0
Copper, British Cake and Ingot ..	73 5 0	73 15 0
Tin, Straits	115 0 0	117 0 0
Do., English Ingots ..	124 0 0	126 0 0
Solder, Silesian ..	16 0 0	16 15 0

TIMBER.				
	per load	£10	10 0	to £16 5 0
Teak, Burmah	..	10	0	15 5 0
.. Bangkok	..	4	0	5 0 0
Quebec Pine, yellow	..	3	5 0	4 12 6
.. Oak	..	3	15 0	6 0 0
.. Birch	..	5	0 0	6 0 0
.. Elm	..	4	0 0	6 0 0
.. Ash	..	3	5 0	4 12 6
Danitic and Menzel Oak	..	3	5 0	4 12 6
.. Fir	..	2	0 0	4 5 0
Wainscot, Riga p. log	..	4	0 0	6 10 0
Lath, Danitic, p.f.	..	7	15 0	8 0 0
.. St. Petersburg	..	7	15 0	8 0 0
Greenheart	..	7	15 0	8 0 0

Box	per cubic foot	0	1	9	..	0	2	0
Sequoia, U.S.A.	..	0	0	0	..	0	0	0
Madroñero, Cuba, per super foot	..	0	0	0	..	0	0	0
1 in. thick	..	0	0	0	..	0	0	0
.. Honduras	..	0	0	0	..	0	0	0
.. Mexico	..	0	0	0	..	0	0	0
.. African	..	0	0	0	..	0	0	0
Cedar, Cuba	..	0	0	0	..	0	0	0
.. Honduras	..	0	0	0	..	0	0	0
Sitka-wood	..	0	0	0	..	0	0	0
Walnut, Italian	..	0	0	0	..	0	0	0
.. American logs	..	0	0	0	..	0	0	0
Do not, per St. Petersburg Standard, 120	121 ft. by 1 in.	0	0	0	..	0	0	0

Quakers, Pine	1st	£25	0	0	to	£30	0	0
"	2nd	17	10	0	"	21	0	0
"	3rd	12	0	0	"	14	0	0
Canada Spruce, 1st		11	5	0	"	14	5	0
"	2nd and 3rd	9	10	0	"	10	5	0
New Brunswick		8	15	0	"	11	10	0
Riga		9	0	0	"	10	0	0
St. Petersburg		11	0	0	"	19	0	0
Swedish		12	0	0	"	21	0	0
Finland		11	10	0	"	19	0	0
White Sea		13	0	0	"	23	0	0
Rattens, all sorts		5	0	0	"	12	10	0
Flooring Boards, 14r square of lin.								
1st prepared		£0	12	6	"	£0	19	0
2nd ditto		"	0	11	6	"	"	0
Other qualities		"	0	7	0	"	"	0

Staves, per standard M : -	€37	10	0	..	€45	0	0
1 - S ditto	220	0	0	..	250	0	0
Memel, cr. paper	130	0	0	..	200	0	0
Memel, brack	130	0	0	..	200	0	0

OILS

Linseed	per ton	£25 0 0	to	£25 5 0
Rapeseed, English pale	"	27 0 0	"	27 10 0
Do., brown	"	25 15 0	"	26 5 0
Cottonseed, refined	"	19 15 0	"	20 10 0
Olive, Spanish	"	38 0 0	"	38 0 0
Sesl, pale	"	26 3 0	"	26 15 0
Cocconut, Ceylon	"	29 15 0	"	30 0 0
Do., Ceylon	"	25 15 0	"	25 5 0
Palm, Lagos	"	27 0 0	"	27 0 0
Oleum	"	17 5 0	"	18 0 0
Lubricating U.S.	per barrel	0 7 0	"	0 8 0
Petroleum, refined,	"	0 0 6½	"	0 0 6½
Tar, Stockholm	per barrel	1 6 0	"	1 6 0
Do., Archangel	"	0 19 6	"	1 0 0
Turpentine, American	per ton	37 0 0	"	37 0 0

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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FRIDAY, APRIL 12, 1901.

MUNICIPAL AND MONUMENTAL DESIGN.

METROPOLITAN reconstruction has already begun in earnest. The first phase has been entered. Demolition of old tumble-down and insanitary property has been going on behind the Strand on the north side for some time, and in a short period we may begin to see the erection of a portion of the new frontage. Rumours are now current of making the National Memorial to the late Queen take the form of a grand Metropolitan avenue adorned with sculpture, which will form a monumental vista or promenade that will vie with those of some of the European capitals. What a grand vista is that now proposed by extending the Mall to Charing Cross, so that Buckingham Palace may be made the western end of the avenue. Its architectural pretensions, however, as a centre are hardly worthy of the scheme. Such a vista might, indeed, be prolonged into the Strand, if we could only remove a few costly buildings and acquire their sites. Again, what a fine street might have been made from Charing Cross to the Houses of Parliament, which as the map shows, are well in line. A noble focus or centre could have been formed by bringing Whitehall and the Victoria Embankment together on the west side of Westminster Bridge, and thus making the Houses of Parliament the centre object of attraction. In a short time we may expect to see the new Government Offices making progress. The area thrown open into Parliament-street enables the visitor to take in a large view of the Abbey and its precincts, and to extend the visual angle. Mr. J. M. Brydon's elevation to Parliament-street will be well broken by a centre attic and corner towers, connected by an arcade to Sir Gilbert Scott's Home and Colonial office block, and the Treasury, a view at which we gave in March and April of 1899. It will be a considerable time before a coherent whole is made in Whitehall. At present it is in chaotic condition, large areas on the east side are still unfilled, and the buildings erected of late years are of a fragmentary kind. The new War Office will to a large extent give an imposing façade south of Whitehall-place. Imagine what might have been produced if Whitehall on the east side had extended to the Embankment, and had been laid out with gardens, as if Inigo Jones's contemplated palace had been carried out. But these schemes are of course visionary; we have to make the best we can of opportunities as they occur—fallen-in leases, demolitions, the erection of public offices, and the like.

Our civic authorities could retrieve much if they exercised control over the building frontages of our main streets, and made those widenings here and there that are necessary, and when required straightened the lines of frontages at certain points. The bringing into line of two streets that are at present divergent or crooked is one way of improvement, making them subserve a dignified appearance. A long specimen thoroughfare, such as the Strand, commands the highest ground rents, and attracts buildings of architectural pretensions. We do not undervalue the picturesqueness that results from narrow, irregular streets, such as we have in the City. These may be allowed to remain whenever there is no direct benefit to be derived from altering their lines. To drive a new straight route through a crowded area of houses and crooked streets is a policy that defeats its purpose, unless such a direct route is a necessity,

as in the approach to a bridge. The straight lines intersect disagreeably various houses at all manner of awkward angles, and create a number of unsightly corners, as may be seen in the Charing Cross-road and other places in London.

Our municipal authorities have not studied the question of planning in the abstract, of the value of aligning streets, of giving them a formal character, and so on. Nor have they made up their minds as to whether new streets should have a formal or irregular character. A great deal may be urged for either principle. For the present irregular architecture of our streets, a common organic law is claimed—namely, that the individual builder should have his own expression: the elevation develops and and shapes itself from within. According to this view, each exterior is the "physiognomy of the being within." On the other hand, there is much to say for "formality" in architecture: it conduces to dignity of character and unity. A municipal authority likes to stamp on its new street buildings a character of this sort. The places and boulevards of Paris are typical of the State and municipal control, and are of that formal type of design of which we have too little in London. If we are to produce any monumental character and stateliness of impression in the Holborn to the Strand thoroughfare on the mind of our visitors, we must do so by adopting the formal treatment and the quality of unity. On the other hand, to make our streets rows of individual units between two party-walls can hardly be seriously contemplated when an extensive frontage is proposed. It has been truly observed by the writer of the Institute Essay on "Formal and Irregular Street Architecture" that irregularity bases itself on a temporary use; but formality on a more permanent use. Yet those who advocate irregularity assert that *use* is the basis of the outward form—that is to say, they think that every front should be designed with reference to the business carried on; but the vicissitudes and changes of business render such an idea absurd, as many different trades may occupy the same house. So that to make the architecture represent the business carried on is not practicable, unless the particular use is unchanged during the existence of the building. According to the theory of formality, a building is not restricted to a particular use, it assumes a more permanent form, and, therefore, Classical composition is more appropriate to such expression.

We can show very little of the monumental as a particular expression of the architectural mind in the Metropolis. What have we at that centre of Metropolitan traffic and life, Trafalgar-square, but a solitary column on its pedestal, and its lions, as far as it goes a satisfactory erection for its day; but look at the surroundings, the "squirts," the paved area, the surrounding balustrade, and the connection with the only two buildings of any architectural interest—the church of St. Martin's, by Gibbs, and the National Gallery by Wilkins. How differently might the whole site have been arranged if a proper scheme had been prepared, and the Nelson column and its base have been designed in connection with the approaches, the fountains and basins, and the building itself, as we have seen in the designing or grouping in the planning of the Albert Hall Memorial and its surroundings that is worthy of opportunity offered. What a unique site was that of the old Horticultural Gardens!—but look at the packing together of three costly buildings that now cover the site, any one of which was worthy of the space. The City and Guilds Institute, the Imperial Institute, the School of Music, and the Natural History Museum are crowded together on no preconceived plan, and even the styles of the buildings are at complete variance,—one of the consequences of our way of proceeding, of selecting one man for

each design, thereby perpetuating for all time the individuality of each architect; but sacrificing the opportunity for a monumental grouping of buildings that will not occur again. Nor can we boast of our Hyde Park Corner, or the approaches to Buckingham Palace itself. No. The fact is, that for what we may call not inappropriately the "ceremonial display of architecture," the imposing grouping of public edifices productive of grand monumental effects, the English has little taste. When we had the means of forming one of the noblest river promenades the world knows, the Victoria Embankment, how meagrely we went to work to connect each bridge-approach with the Embankment, to make each landing-stage or pier worthy of the Thames highway, or even an embankment wall and lamps that would give dignity to the roadway. One of our contemporaries observes that "experience warns us that our monuments have not been successful in the past, and that the architectural achievements of one generation do not commend themselves to the next." But why do they not? Because we are in the habit of doing these things piecemeal—doing a little at a time, in a higgling spirit, and of selecting certain architects to do the work, instead of preparing a comprehensive scheme at the beginning.

The present awakens new possibilities. The proposed architectural treatment of the Mall from Buckingham Palace to Trafalgar-square is a grand scheme if carried out with the joint aid of both the architect and the sculptor; but we ought to have the best the profession can give—the noblest scheme that the two professions are capable of producing. Is it desirable that the architectural part of the scheme should be limited to five architects, however able or well chosen? Are we sure that the highest architectural expression of the age can be secured in the selected architects? These are questions that cannot be lightly set aside. If not an open competition we might at least have a larger selection of architects, representative of the United Kingdom, of the various schools of design, and we think Mr. Leonard Stokes's suggestion to have an open competition in the first instance confined to sketch schemes, from which to select the kind of memorial most suited, and afterward to select a few representative men to develop the idea, is one deserving of consideration, for, as he observes, the best men are certainly not the most likely to think of the most felicitous treatment. Other opinions are strongly in favour of a yet much wider selection of architects for a competition for a national memorial to Queen Victoria, an opportunity that is not likely to occur again in this century. But we are not now discussing much the means and methods to be pursued as the form of the memorial. To design a scheme to connect Buckingham Palace with Trafalgar-square will embrace many important features—a large and imposing area before the Palace itself to connect it with the Mall, groups of sculpture or possibly a triumphal archway; erections of a sculptural character at intervals along the avenue, and a grand entrance into Charing Cross, to say nothing of the special memorial of the Queen at the Palace end. The sculptural groups might signify the experience of the nation during the Queen's reign, or be emblematic of national events and the development of the arts of peace. In such a scheme, the modelling of the Palace front on the Mall side would be necessary to make it worthy of connection with the avenue and its architectural accessories. No scheme will be worthy of the occasion that does not include sculptural embellishment, and to this end we believe a competition among architects and sculptors for sketch designs is desirable, as it would enable the possibilities of grouping to be perceived before a final selection is made.

sculptured groups are to be placed, also for a general scheme of architectural embellishment.

Professional avenue. These designs are to be submitted within the next three months.

the exercise of much thought and artistic skill

unity of conception throughout, so as to avoid the appearance of a fragmentary arrangement. It would be unsatisfactory to erect a costly and elaborate memorial or archway at either end, and have the intermediate parts poor and of stunted design, and sculptured features ought to form an integral part of the scheme. Anything like a number of disjointed architectural erections, pedestals, niches, or columns left for the sculptor, to be completed as the funds permit, would lead to a failure such as we have had to lament in nearly all our public memorials. The sculptor and the architect must work together, must combine their abilities and energies in the task, instead, as too often, of working on independent lines. We should, therefore, have liked to have seen models or sketches prepared by an architect and sculptor of eminence for the whole design, rather than the placing of these inseparable parts of the scheme into the hands of independent artists. Such suggestions, in the form of models, ought to be submitted to the public for criticism and improvement before a final design is selected. Again, it is not possible to produce a design that is at once dignified and monumental, unless it follows Classical lines. But have we any assurance of Classical treatment from the names of those selected for the task? Other countries besides Italy, France, Austria, have surpassed us in the taste and energy displayed in carrying out public improvements. The monumental grouping of the Governmental buildings in Washington, D.C., discussed lately before the Convention of the American Institute of Architects, General Washington selected the site of the National Capitol in an amphitheatre of hills through which the Potomac runs. Here he selected the site for the city, Pierre L'Enfant, a Frenchman, who, with a grasp of the situation, saw at once how best to plan the city. One writer has pointed out the main monumental features of the plan, the dominance of the Federal building and an avenue direct between the Capitol and the White House, the dome of the Capitol forming a centre of eight radiating avenues. We hear of the magnificent possibilities of the proposed "Centennial Avenue," with which the Avenue des Champs Elysées could hardly be compared for dignity, accessories of landscape, and sculpture. Is it not time that London, the "richest city in the world," should attempt, at least, to emulate the younger cities of the West, in learning how to make the best of the opportunities now offered?

BUILDING BY-LAWS IN RURAL DISTRICTS.

THE question of building by-laws in country districts is a question that has been before the profession for a long time. The bodies in the rural districts have many parts to impose rules and regulations on building owners and

British Architects waited on Mr. Grant Lawson, the Parliamentary Secretary of the Local Government Board, to lay before him a summary of the conclusions arrived at last week. We give last week a summary of the conclusions arrived at. The points make it clear that there has been of late years a great increase of interference by public bodies and their officials with buildings in country places arising from the powers conferred by the L.G.B. in the manner we have stated. Rural district councils are not under any obligation to make by-laws of this kind, and, as it is stated, such an assumption of powers by a local authority is unnecessary, and a "vexatious infringement of the liberty of the individual." The "points" laid before the secretary also made it clear that there is no desire on the part of the R.I.B.A. to limit the application of such by-laws as are strictly sanitary in their object, or as to the width of streets; while an efficient party-wall by-law would sufficiently protect one house from another in country places. On the other hand, minute requirements of the by-laws against fire are unnecessary and vexatious. These requirements are often rendered "grotesque by the erection of large structures in wood under the form of balconies and verandahs."

The suggestion made by the Institute is that the "Local Government Board should arrange their model by-laws in divisions, and sanction in each district only such as are really needed therein," and so protect the public from vexatious interference. It is also suggested that the system of dealing with party-walls by the appointment of three surveyors, as re-enacted in the London Building Act, 1894, has proved successful, and that it should be extended to the growing suburbs around the area under the London County Council, and such towns as are without special legislation on the subject. That a tribunal of appeal in connection with the Local Government Board should be established for settling differences, &c. As will be seen from Mr. Lawson's reply, efforts have been made to adopt some mode of meeting these difficulties, and, as he pointed out, a difference in the codification of by-laws for rural and urban districts should be made; but the function of the Local Government Board is only to approve of by-laws submitted to them by local authorities, it not being their duty to take the initiative. He pointed out that it was not in the power of the Board to compel a local authority to adopt any particular set of by-laws, and only in cases where very insanitary conditions prevailed did the Board encourage a local body to take "urban powers."

The Board has drawn up a set of by-laws for rural district councils, on which he invited the Institute's opinion. These include exemption of terms, exempted buildings, structure of walls and foundations of new buildings for purposes of health, with respect to sufficiency of space about buildings and with regard to ventilation; with respect to drainage of buildings, water-closets, water supply to same, also in respect to earth, closets, ashpits, cesspools, to the closing of buildings unfit for habitation, and in respect to deposit of plans. These are mainly sanitary in their application, and regulations as to materials and structural details are omitted. A promise was given as to the extension of the London party-wall system to all country districts. These proposed by-laws are to be considered by the committee.

Let us briefly refer to the legal aspect of the question. Rural districts may be invested with powers under sect. 276 of the Public Health Act, 1875, by the L.G.B. These powers

relate to the level, width, and construction of streets, and the sewerage thereof; to the structure of walls, foundations, roofs, and chimneys of new buildings; to the sufficiency of space about buildings, to secure free circulation of air and to ventilation; to drainage of buildings to closets, ashpits, and cesspools, and to the closing of buildings or parts unfit for human habitation (see Sect. 157). The Local Government Board may, on application of any rural district authority or of persons rated to the relief of the poor, whose assessment amounts at least to one-tenth of the net ratable value of the district, declare any provisions in force in urban districts to be in force in such rural district or contributory place, &c.

There are, as we have urged before, certain essentials necessary to both rural and urban districts, such as to secure ample sanitary areas round buildings, dry and substantial buildings, safely against fire, air-space, ventilation, and drainage to all new buildings; but the question is whether these essentials should be secured by by-laws of the same minuteness as those which apply to urban districts. As prevention is better than cure, it is necessary to make streets wide enough for growing districts; that the drainage and removal of refuse should be provided for by proper and efficient means during the construction of new buildings; but as to questions of materials and construction of new buildings the case is not so evident. Why should we compel the builder of a private dwelling-house or cottage to comply with by-laws framed to meet urban districts, to prohibit him from using hollow walls, wooden construction, timber framing to outer walls, weather tiling, or to make any deviation from prescribed wall thickness, which are found to be economical, and suitable to the materials of the locality? Neglecting exempted buildings under the Act, we have certain provisions of a very definite and exacting kind relating to the materials of walls and their thickness, and these rules are pretty general in their application, for the term "domestic building" includes all not exempted except the "public" and "warehouse" classes. The rules applying to roofs exclude all those artistic and picturesque accessories which the architect is most concerned with, such as cottages with thatched roofs, timber-framed gables and turrets, shingled erections, and many other materials that one expects to see in country districts. Even the wooden shed or lean-to, so dear to the country farmer or cottage, is prohibited in certain forms; on the other hand, parapets above roofs as a protection against the spread of fire are made compulsory. With every desire to protect the safety of the labourer's cottage from fire, and to insure sanitary conditions, which should be made the subject of regulation, we think a little common-sense consistency ought to be shown to the rural builder. Let the by-laws apply to "public buildings" and "buildings of the warehouse class," or even dwelling-houses in certain semi-urban areas; but exempt from their operation these numerous dwellings, farm buildings, and cottages which largely make up the rural districts. To build a cow-shed hundreds of feet away from any other building with 9in. brick walls is rather superfluous. Again, it has been well pointed out that there is no valid reason why, in pairs of well-built cottages, the 9in. party-wall should be carried up to slates or tiles. Also, it is objected that a large number of farm buildings, such as sheds, do not come within the exemptions. There are strong objections to a hard-and-fast code of by-laws framed to meet urban requirements and densely-crowded neighbourhoods, and therefore we recommend every rural council to hesitate before it adopts a set of regulations that presses very hardly and unfairly on the country building owner. The codification of

services it leaves much to be desired, with no side-chapel and its crowded-up chancel, fine building

attention is the first volume of a Dictionary of

York, under the direction of Mr. Russell Sturgis,

assisted by some others*, whose names include many architects, engineers, and other specialists.

information is given in a very full and complete manner, and the illustrations are of a high standard.

the substance of previous or following paragraphs are avoided. The editor has been at some pains

to secure the reproduction of several well known works of the past, and has also borrowed

from Viollet le Duc's works, Street's "Spain," Mr. T. G. Jackson's "Dalmatia," and other

books too numerous to mention. A list will be given at the end of the third volume, in which the dictionary will be completed. Sydney Lee's

"Dictionary of National Biography" is quoted freely for notices of English architects, and references to the source of information accompanies

the extracts, which, for the most part, are brief. Practically there is no architectural dictionary

available to the ordinary student in English save the expensive folio work issued by the Archi-

tectural Publication Society at great cost a few years ago, after long periods of delay, which did not

improve its up-to-date character. This dictionary, therefore, will be found acceptable to a large class

of students and others who need a handy work of reference. Some contemporary London buildings

are utilised as illustrations, and a long article by the editor is devoted to architecture in England

in which he sums up his remarks with the opinion that English architects have found their more

perfect success in their humbler and less ambitious buildings, and that is why the small

churches in this country are so invariably charming, and that our large buildings, especially on

Classic lines, are often lacking in interest, and inferior to Italian and French work.

This first volume of nearly a thousand pages of closely-printed matter and numberless illustrations

gives a good idea of the inclusive character of the work as a whole, with a tendency

to be more scientific, perhaps, than artistic in its preferences—an impression to some

extent suggested by the want of uniformity in the style of the illustrations introduced, and which consequently are of varying merit.

The dictionary deserves success, and commanding the field as it necessarily does, owing

to the absence of competitors, no doubt the publishers will find their enterprise widely

welcomed both in England and the United States. The following volumes will be looked

for with interest, and it is to be hoped the entire work will be completed without appreciable

delay.

HOW TO ESTIMATE, OR, THE ANALYSIS OF BUILDERS' PRICES.—IV.

By JOHN T. REA, F.S.I., Surveyor, War Dept.

PRELIMINARY AND PROVISIONS.

BEFORE proceeding to the various trades, it will be well to discuss the various items which appear under the above heading as a preface in a bill of quantities, as these require to be analysed quite as much as builders' prices for other work. Those items that do not require to be thus dissected have been omitted.

LIST OF QUANTITIES FOR ARCHITECT.

"Extras and omissions to be valued at the prices of the contract, for which purpose a fully priced and moneyed out copy of the quantities shall be deposited with the architect, and any item of extra work which does not exactly agree with the descriptions of the original estimate to be valued at a price analogous thereto."

This is understood, and it is not usual to enter any sum against such item, as the small extra expense is covered by the amount put down for "Cost of lithography and expenses" at the end of the bill of quantities.

A Dictionary of Architecture and Building. Vol. I., A. L. The Macmillan Company, New York, 2s. net.

FOREMAN.

"The foreman to keep an approved and responsible foreman constantly on the works."

On no person connected with a building job is so much generally expected as upon the foreman. He is, in fact, the chief supervisor and general factotum. It is to his intelligence and ability that all good work is due, for he is responsible for good or bad workmanship and materials, and for the diligence or slothfulness of the men under him. He keeps the accounts of the quantity of stuff used, and renders the daily and weekly returns of the number of men employed, when there is no clerk on the works. Generally he rises from the ranks of the carpenters, or often from among the bricklayers or masons. The material prices are best calculated without taking the foreman into account, and the cost of his maintenance should be kept separate. In order that he may finish the works properly, rather more than the stated period of erection should be allowed for his wages, which may be averaged at £3 per week.

WATER FOR THE WORKS.

"Allow for supplying water for all the works, including fees, temporary plumbing, and storage of water."

Water is always required on the works for mixing mortar, concrete, wetting bricks, &c., and in provincial towns, when supplied by a local water company, it is generally put down at about £4 or £5 per job of medium size. If in country places, the water can often be conveniently obtained from adjacent rivers or lakes, or a well may have to be dug, and the water drawn or pumped up, in which case the use of the pump and hose must be included. The hire of a 4in. to 6in. diam. wrought-iron contractor's pump is 7d. per week after the third week, plus 5s. chain hire; but a large contractor would possess his own plant of this sort. Taking water supplied in London by meter at 1s. per 1,000gal., we have less than 7d. for a yard of concrete.

London is supplied by eight water companies, each publishing its own set of regulations and charges, which differ extremely, and the details of which may be obtained on application. The opening of the ground, connection with the main, and reinstating, is always made by the company's servants, for which a charge is made, varying in different localities. These eight companies are:—The Chelsea, New River, Grand Junction, Kent, West Middlesex, East London, Southwark and Vauxhall, and Lambeth. The charges for temporary water supply are based on different values as follows:—

Charges for every 1000 gal. of estimated cost of building to be paid in advance.

Also, 10s. reckoned upon the estimated cost of building:—

£100	10s. each.	£325	32s. each
125	13s. "	500	37s. "
150	15s. "	750	38s. "
175	18s. "	1000	40s. "
200	20s. "	1250	42s. "
225	23s. "	1500	45s. "
250	25s. "	1750	50s. "
275	28s. "	2000	55s. "
300	30s. "	1,000-1,200	70s. "

Also, £1,200, 5s. per cent. additional.

Charges on estimated cost of building:—

£100 and under	£500	8s. 6d. per cent.
500	1,000	7s. 6d. "
1,000	2,000	6s. 6d. "
2,000	3,000	5s. 6d. "
3,000	4,000	4s. 6d. "
4,000	5,000	3s. 6d. "
5,000	6,000	2s. 6d. "

NOTE. A printed notice has to be filled in for building supply, with the estimated cost of building. A charge of 12s. including the female stoep and saw-box, is made for connection, and the company is not responsible for repairs to roads, &c. Per cent. cost of building.

Not exceeding £100	12s. each
Ex. Over £100 and not exceeding £150	15s. "
" 150 "	20s. "
" 200 "	25s. "
" 250 "	30s. "
" 300 "	35s. "
" 350 "	40s. "
" 400 "	45s. "
" 450 "	50s. "
" 500 "	55s. "
" 550 "	60s. "
" 600 "	65s. "
" 650 "	70s. "
" 700 "	75s. "
" 750 "	80s. "
" 800 "	85s. "
" 850 "	90s. "
" 900 "	95s. "
" 950 "	100s. "
" 1,000 "	1,050s. "
" 1,050 "	1,100s. "
" 1,100 "	1,150s. "
" 1,150 "	1,200s. "

Also, £1,200 by per cent. additional.

NOTE. A printed notice has to be filled in for building supply, with the estimated cost of building. Charges are payable in advance, at 5s. per cent. on the estimated cost of building. The company's expenses of laying on the supply have to be paid for at the time the connection is made, at the rate of 5s. for opening ground and providing terraces. Then charge for houses 12s. 6d. in

manlike manner, furnishing a vast amount of in-

volume of this character, in which many a sug-

On contracts the writer gives various forms hitherto in vogue, including those for specialists

a useful trade list of firms, though of necessity this is not very comprehensive. Added

works on materials and construction. There

Students can hardly do better than add the work to their essential sources of information.

"The Principles of Planning,"* by Mr. Percy L. Marks, is an illustrated analysis of the leading characteristics of planning for various buildings, illustrated by typical examples. The scope of the types chosen for consideration is for the main part necessarily devoted to ordinary buildings, though Royal Palaces, Parliament Houses, Royal Academies, Government Offices, General Post-offices, and the like are included in the review. The specimens illustrated comprise executed buildings by Sir G. G. Scott, R.A., Mr. A. Waterhouse, R.A., Col. Edis, Sidney Smirke, R.A., Mr. Thos. Blashill, Mr. Maurice B. Adams, Mr. H. Saxon-Snell, Mr. A. N. Prentice, Messrs. T. W. Aldwinckle and Son, and Mr. T. J. Bailey, the architect to the London School Board. The list is enough to indicate the variety introduced, and each architect enumerated has been chosen as the

with which he has become specialised, so to speak. We do not think we can do more than thus suggest the contents of Mr. Marks' volume, which contains much handy data for calculating essential features and areas of accommodation, though, of course, anything like exclusive expert information on special buildings cannot be looked for in such a treatise, particularly where detailed features by the very nature of things vary with altering ideas, and where standard requirements have to be adapted to local conditions.

The author has, however, taken considerable care to show representative examples of different types of buildings, and he has taken the parts of houses in detail for examination. The ordinary convenient style of double-fronted dwelling is represented by a villa at North Finchley. We cannot say we admire the plan for a country house on plate 36. The drawing-room is so ungainly in shape; the front door appears so awkward with the vestibule door opening at right angles close upon the entrance; and further, the dining-room fire-place is so inconveniently placed, that it is difficult to see how it can be used. The kitchen, and having a chimney, is so placed that it is difficult to see how it can be used. The plan of the house, which has given other examples of what to avoid, and

externally only serve to accommodate ugly w.c.'s within, and so balance with a window well fitted for a drawing-room on the other side of the house. The end of the volume includes an abstract from the by-laws of the L.C.C. affecting the planning of places of entertainment and particulars from the schedule of the Education Department for regulating the planning of public elementary schools. The volume would have been increased in utility if the plans of the larger buildings could have been shown to a more readable scale. The plan of St. Mary Abbots, Kensington, is given as a specimen of "an effectively planned church." The way in which the building is over-crammed with pews always strikes us

the £ on the rental value of the house, for six months' use.

Printed Schedule.—No printed schedule for building supply is issued; but particulars of works to be executed have to be filled up on form supplied. Rates are 1s. per rod on brickwork, and 1d. per yard cube on concrete.

Standard and Particulars.—Information is not published, but changes are issued on application.

Fixed Scale.—No fixed scale is furnished for building supplies, but each case is dealt with individually. Charge for connection, including stopcock, ferrule, opening ordinary ground, and reinstating, constant-supply district only, 3in., is 15s.

An analysis of the cost of a building supply from a London company say the Grand Junction for a job to cost £1,000 would therefore be—

ANALYSIS.	
Cost of water, 6s. per cent. on £1,000	£1 0 0
Company's charges for opening ground and providing ferrule	0 5 0
Use and waste only of, say, 30ft. run of 3in. lead pipe at 4d. per foot	0 10 0
Ditto of ball-cock	0 1 0
Soldering joint of 3in. lead pipe and ball-cock	0 1 6
	3 17 6
Add 10 per cent. profit on first two items	0 6 6
Total	£4 1 0

The piping, &c., used is only for temporary purposes, and will, therefore, revert to the contractor, who merely charges for use and waste.

FIRE INSURANCE.

"Allow for insurance from fire to the amount of tender, and deposit the policy with the architect."

It appears to be more customary to have buildings insured during erection in London than in provincial towns, where they are generally not insured at all. In the former, it is unusual to insure before the roof is on, or until some combustible material is fixed; and then it is frequently stated for only two-thirds the amount of contract. A reasonable scale may be taken as below, to which the contractor may add 10 per cent. profit.

Value.	Three Months.	Six Months.	Nine Months.	Twelve Months.
Per cent. of insured value	4s. 6d.	1s. 6d.	2s. 6d.	2s. 6d.

NOTICES TO ADJUDICATORS.

"Allow for giving all notices to the local authorities, and for supplying any drawings or information required by them, and pay all fees."

Copies of local building by-laws and regulations can be obtained on application at the borough surveyor's office, where tracings by the architect of the plans, showing drains, &c., have to be deposited in time to be laid before the council or building committee for approval.

In so vast an area as the Metropolis, the London Building Act of 1894 specially controls the erection of all buildings, which are subject to the supervision of the district surveyor appointed to the district in which the structure or building is situated. Of these there are 64, and by par. 145, Part XIII., the notices to be given to the surveyor by the builder are—

"145. In the following cases and at the following times, that is to say:—

Where a building or structure or works is about to be begun, then two clear days before it begins, and

Where a building or structure or works is, after the commencement thereof, suspended for any period exceeding three months, then two clear days before it is resumed; and

Where, during the progress of a building or structure or work, the builder employed thereon is engaged, then two clear days before a new building is upon the continuance thereof.

the builder (or other person causing or directing the work to be executed) shall serve on the district surveyor a building notice respecting the building or structure, or work. Every building notice shall state the situation, area, height, number of stories, and intended use of the building or structure, and the number of buildings or structures, if more than one, and the particulars of the proposed work, and the name and address of the person giving the notice (and those of the owner then in possession of, and the occupier of the building or structure, or of its site or intended site). All works in progress at the same time to, in, or on the same building or structure may be included in one building notice."

The following are the fees payable to district surveyors:—

ON NEW BUILDINGS.

For any building not exceeding 30sq.ft. in area and not exceeding 10ft. in height	£0 10 0
For every building not exceeding 400sq.ft. in area and not more than two stories in height	1 10 0
For every additional story	0 5 0
For every additional square of 100ft. or fraction of a square	0 2 6
For every building not exceeding 400sq.ft. in area and of one story only in height	0 15 0

ON ADDITIONS, ALTERATIONS, OR OTHER WORKS.

For every addition or alteration, or other work to which the provisions of this Act apply, made or done to or on any building after the roof thereof has been covered in, one-half of the fee charged in the case of a new building, calculated upon the area of the whole building	
For inspecting the arches or fire-resisting floors over or under public ways	£0 10 0
For inspecting the formation of openings in party-walls for each opening	0 10 0
For inspecting the closing of openings in party-walls for each opening	0 10 0

"Provided that in the case of public buildings, buildings constructed of concrete, and buildings divided into separate sets of chambers or tenements by party-structures, the fees before specified shall in every case be increased by one-half."

There are also fees for chimney shafts and flues, for certifying plans, and for attending at Court when an order is made on the builder for complying with the notice of irregularity. The fees required for inspection of any wooden or temporary structure are the same as for a new building.

In addition to the foregoing, by the by-laws of the London County Council, there is a fee to the district surveyor of 5s. on any new house or building, in respect of the duties imposed upon him by the Metropolitan Management and Building Acts Amendment Act, 1878, and these by-laws, such fees to be payable in the manner and at the time prescribed by section 51 of the Metropolitan Building Act, 1855.

By the same Acts it is necessary to conform to the regulations of the various Metropolitan vestries, district boards, and parishes, chiefly as regards sanitary measures and connections to drains and sewers, &c., and plans must be sent in of the proposed systems. The rules and charges are best obtained on application; but those of St. George's, Hanover-square, may be quoted as being fair and reasonable.

The parish contracts drawn with sewer, inserting flap-trap and two lengths of pipe at the following rate

6in.	£0 15 0
9in.	0 19 0
12in.	1 6 0

The builder digs and fills in.

WATCHING AND LIGHTING.

"Allow for any necessary watching and lighting."

It is frequently desirable to keep on the premises a day watchman during non-working hours, and a night watchman, to prevent theft of

material. The pay of such is 5d. per hour, plus 1d. per hour for use of lamp, including oil and wick, and his total period of watching can easily be calculated from the length of time put down for the completion of the building.

If it is found necessary to perform work of any description by artificial light, the contractor is allowed the cost of the light only in addition to the contract rates. The "Wells' light" and the "Lucigen light," which generate oil into vapour and burn it in large powerful flames, are the artificial lights best adapted for contractors' and general outdoor purposes, as they are portable and self-contained.

CLERK OF WORKS.

"Allow for an office for clerk of works and the requisite firing, light, and attendance, and for all sheds, &c., required for materials."

Contractors either erect a temporary wooden office on the site for the clerk of works or else have a small portable structure, which can be taken about from their yard to the job. The former would be knocked together from any old pieces of boarding, and might cost £10; while if the latter were constructed of galvanised iron, and consisted of one room about 8ft. by 8ft., it would come to about £15 when purchased new. A small stove or fire-place would be required in the winter months, for which allow 6d. per day for fuel.

One or two rough wooden sheds may be necessary in which to store cement, timber, and other materials from the weather, or to provide shelter for the masons when cutting out stone. The number and size of these would entirely depend upon the kind of job.

MAKE GOOD ALL DEFECTS.

"Allow for keeping the works in proper repair for six months after completion, and for making good all defects or damages that may arise during that period and during the progress of the work, including injury by frost, &c."

A careful builder will avoid risks in this connection by attention and foresight, and by seeing that all workmanship and details are properly carried out; otherwise the sum put down for this item will have to be higher than need be. The amount will be more or less speculative, but a valuation of £5 per £1,000 of work is not out of place.

ATTENDANCE ON EACH TRADE.

"Allow for each trade to attend on all others, and do all jobbing work required."

Such a clause affects builders more in the North than in other parts of the kingdom, where the system of separate contracts for each tradesman obtains. Each tradesman has to attend and make good the work of others, as when a bricklayer has to pin in the end of a beam with cement, or a mason cut a hole in a wall for a gaspipe and make good. The charge for this item is very un-

HIRE OF PLANT.

Description.	First Week.		Second Week.		Third Week.		After Third Week.	
	Day.	Week.	Day.	Week.	Day.	Week.	Day.	Week.
Barrows, wheel	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Blocks and full, of size ordered	0 5	2 0	0 3	1 4	0 1	0 8	0 0	0 4
Ladders, pulley, differential, with chain	1 0	5 0	0 8	3 4	0 4	1 8	0 2	0 10
Boards, scaffold	2 0	10 0	1 4	6 8	0 8	3 4	0 4	1 8
Boards, scaffold	0 2	1 0	0 1	0 8	0 0	0 4	0 0	0 2
Crab, double purchase, complete	0 2	1 0	0 1	0 8	0 0	0 4	0 0	0 2
Engine, portable, for pumping or other purposes, not exceeding 6H.P., including coals and attendance	3 0	15 0	2 0	10 0	1 0	5 0	0 6	2 6
Engine, ringing, or crab pile, including rings, pulleys and every necessary article for driving piers	1 0	5 0	0 10	1 0	0 8	2 6	0 4	1 0
Engine, ringing, or crab pile, including rings, pulleys and every necessary article for driving piers	30 0	150 0	25 0	125 0	16 6	83 0	12 0	77 0
Jacks, screw, to lift piers	5 0	25 0	3 4	17 0	1 8	8 0	0 10	4 0
Ladders, 20 ft. and over	0 7	3 0	0 5	2 0	0 3	1 0	0 1	0 6
Ladders, 20 ft. and over	0 5	2 0	0 3	1 4	0 1	0 8	0 0	0 4
Ladders, 40 ft. and over	1 0	5 0	0 8	3 4	0 4	1 8	0 2	0 10
Ladders, 60 ft. and over	1 3	6 0	0 10	4 0	0 5	2 0	0 2	1 0
Mill, mortar, with pan 5ft. diam., &c.	10 0	50 0	6 8	23 0	3 4	17 0	1 8	8 0
Planks, wheeling	0 6	2 6	0 4	1 8	0 2	0 10	0 1	0 5
Poles, scaffold, under 22ft. long	0 5	2 0	0 3	1 4	0 1	0 8	0 0	0 4
Poles, scaffold, over 22ft. long	0 9	3 9	0 6	2 6	0 3	1 2	0 1	0 7
Pumps, W.L., contractor's 4in. to 6in. dia.	0 9	3 9	0 6	2 6	0 3	1 2	0 1	0 7
Pulley, double purchase, complete	0 2	1 0	0 1	0 8	0 0	0 4	0 0	0 2
Tarred and oiled	1 0	3 0	0 6	2 6	0 3	1 2	0 1	0 7
Trestles for two boards on top, 6ft. high	0 6	2 6	0 4	1 8	0 2	0 10	0 1	0 5
Trestles for two boards on top, 9ft. high	0 7	3 0	0 5	2 0	0 3	1 0	0 1	0 6
Wagon, four wheel	3 0	15 0	2 0	10 0	1 0	5 0	0 6	2 6
Wagon or cart, two wheel	2 0	10 0	1 4	6 8	0 8	3 4	0 4	1 8
Wedges, scaffold	0 2	1 0	0 1	0 8	0 0	0 4	0 0	0 2
Wheel and rope	0 9	4 0	0 6	2 8	0 3	1 4	0 1	0 8
Wheels or pulleys, 12in., contractor's rubbish, with frames complete, and 150ft. of rope	0 6	2 6	0 4	1 8	0 2	0 10	0 1	0 5
Winch builders', with two wheels, and baskets and rope	4 0	20 0	2 8	13 4	1 4	6 8	0 8	3 4

mission is charged if a purchaser is found thereby. If the *M. J.* is not a publisher, the publisher is liable, and the publisher is liable.

$$\text{trace}(\text{det}(\text{Id} - t\text{pl}_1)) = \sum_{i=1}^n (-1)^{i+1} \text{tr}(\text{pl}_1^i) = \text{tr}(\text{Id} - \text{pl}_1).$$

The above cases are only typical ones, and provisional amounts may be inserted for anything. The object of thus stipulating that the contractor shall provide a certain sum of money in his

AT the Ordinary Meeting of the Institution of Civil Engineers on Tuesday, April 2, Mr. James Mansergh, president, in the chair, the paper read was "The Burrator Works for the Water Supply of Plymouth," by Edward Sandeman, M.Inst.C.E. The waterworks of Plymouth dated from 1590, in which year Sir Francis Drake, under powers conferred by an Act of Parliament of 1585, had commenced to build a weir on the river Mewe or Meavy, and to excavate an open watercourse or leat from the weir to Plymouth, a distance of $10\frac{1}{2}$ miles in a direct line, but $18\frac{3}{4}$ miles along the route taken. The draining area above the weir was 4,885 acres. The work had been completed, and water had been brought into the town in April, 1591. Water taken from the river by this means had supplied the town for 300 years. The open watercourse, however, was liable to be blocked in times of snow and frost, and for this reason, and also because the increased population demanded a larger and more certain supply, various schemes had been promulgated for the storage of floodwaters and the protection of the leat. In 1891, the author had been appointed water engineer, and a few months later he had presented a report, which had been adopted, advocating the building of a storage-reservoir and the substitution of a line of pipes for the open leat. An Act of Parliament had been obtained in 1893 for the construction of the necessary works, which had been commenced in August of that year, Mr. James Mansergh, President Inst. C.E., acting as consulting engineer. By the new scheme the drainage-area had been increased from 4,885 acres to 5,360 acres. Nearly the whole watershed lay on the granite formation, a small portion on the west side being on the Upper Devonian. The rainfall was about 58in. or 60in. annually, and an interesting feature of this gathering-ground was the unusually high dry-weather flow from it. The Burrator reservoir was formed by two dams, one of masonry across the narrow gorge through which the River Meavy flowed, the other of earthwork

lying between two hills, Sheepstor and Bannator. The greatest depth of water was 77ft., and the area covered by water was 117 acres, the quantity of water impounded being 657,000,000 gallons. The masonry dam called the Bannator dam was built of large rough blocks of granite in cement in the interior, and faced with irregularly coursed granite on both sides. From bottom of foundation to coping of parapet wall, the height was 145ft. 6in. A roadway 18ft. wide was carried over this dam on five segmental arches of 25ft. span. The earthen dam was remarkable for the fact that its construction had involved the cutting of a very deep trench for the foundations, although the dam had to withstand but a small head of water. The trench had been cut through decomposed granite to a depth of 105ft. in the centre, although the depth of water against the dam was only 17ft. This trench was interesting on account of the peculiar geological features met with. The watertight core of the dam was of concrete (5ft. in thickness) up to within a few feet of ground-level, and of clay from that point upwards. Water was drawn from the reservoir through two pipes, 36in. and 25in. in diameter respectively, laid in a 10ft. culvert built in the masonry dam. There was no valve-tower. There was a specially designed valve to close the mouth of each outlet-pipe, worked by gunmetal rods and chains from a chamber at the top of the dam, in addition to sluice-valves in duplicate in a valve-chamber on the lower side of the dam. The water drawn for consumption was passed through iron-chambers before entering the pipe leading to the service-reservoirs. The flood-water running to waste was measured over a weir 50ft. wide, the height of the water over the weir being recorded on a drum turned by clock-work. The compensation-water was measured by an orifice-gauge placed immediately below the weir. The water supplied to the town was measured over a gauge with 12ft. wide, after which it passed through a 25in. Venturi meter, which automatically recorded the flow on a diagram. The pipe-line, which had been laid in lieu of the old leat, was $\frac{1}{2}$ miles long. The pipes were 24in. in diameter, and were capable of delivering between 8 million and 11 million gallons per day. The pipe-line had been completed in May, 1894, and the reservoir and other works in June, 1899, at a total cost of £178,000.

BUILDING TRADES EXHIBITION.

THE International Building Trades Exhibition will open at the Agricultural Hall, Islington, on Wednesday next, the 17th and remain open to the 27th inst. The Great Hall will be devoted to General exhibits, the Minor Hall to the exhibition of Fire-prevention Materials and Appliances, while the Coal-smoke Abatement section will be found in King Edward's Hall. The following fixtures have been arranged, and others will be announced:—

Friday, April 19.	Visit of Institute of Builders.
Saturday, .. 20.	Visit of the Architectural Association.
Wednesday, .. 21.	Visit of the Sanitary Engineers.
Thursday, .. 25.	Visit of the Society of Architects.
	Annual Meeting and Dinner of Institute of Clayworkers.
Friday, .. 26.	Conference on Standardising of Bricks.
	4 p.m.

In respect to the standardising of bricks, this conference has been arranged jointly by the Royal Institute of British Architects, the Association of Civil Engineers, and the Institute of Clayworkers. The chair will be taken by Mr. Thos. Blashill, F.R.I.B.A., and anyone desirous of attending the meeting may obtain admission upon application to 43, Essex-street, W.C.

On Monday the Institute of Clayworkers will entertain at a banquet a party of fifty Germans engaged in the building industries, who are paying a visit to England for the purpose of visiting the exhibition.

We shall in our next issue note the principal novelties in the exhibition. We can here only direct the attention of intending visitors to the stands and exhibits of the following firms, all of which will be found interesting:—Messrs. B. Dellagana and Co., J. Austin and Sons, McNeill and Co., B. Ward and Co., W. Griffiths, Mark Gentry, British Uralite Co., Mark Fawcett and Co., New Expanded Metal Co., Crittall Manufacturing Co., Hobbs, Hart, and Co., J. Knowles and Co., British Composite Board Co., St. Pancras Ironworks Co., Banks Fireproof Flooring Co., Aspinall's Enamel, Ripolin, British Luxfer Prism Co., Palmer's Travelling Cradles, Ewart and Sons, E. A. Williams and Son, Ratner Safe Co., J. Woodward, Ltd., Jos. Fishburn.

BRITISH AND IRISH BUILDING STONES.

XXIII.

CAERNARVONSHIRE.

THE rocks in this county are Coal Measures, Carboniferous Limestone, Lower Carboniferous Sandstone and Marl, Upper and Lower Silurian (not yet separated), Arenig of the Ordovician series, Tremadoc Slates and Lingula Flags of the Upper Cambrian, Harlech and Barmouth Beds of the Lower Cambrian, Pre-Cambrian, and Igneous. Alluvium and Glacial drift are found all over the county.

Caernarvon is built on Lower Silurian rocks, Porphyry, Coal Measures, and Carboniferous Limestone. Bangor: Lingula Flags, Cambrian Slate, Conway: Caradoc and Wenlock rocks, Felspathic Ash, Llandudno: Carboniferous Limestone, Pwllheli: Serpentine, Greenstone, Alluvium, Caradoc rocks.

There is a remarkable deposit of Glacial drift covering the whole west side of Snowdon; it extends from Clynog Fawr, south of Caernarvon, in a north-easterly direction to Penmaenmawr, near Conway, and is over 24 miles long by 3 miles wide; it completely conceals the underlying rocks by thick beds of gravel. On the coast near Clynog, this Glacial drift forms cliffs nearly 100ft. high; it passes inland east of Caernarvon and Bangor, terminating northwards on the coast between Aber and Penmaenmawr. It is made up chiefly of pebbles and boulders derived from the Snowdon rocks. Similar accumulations are found in the lower parts of the Llyn peninsula. The newest solid rocks in the county are the unproductive Coal Measures, found in a narrow band along the Menai Straits between Caernarvon and Llanfairisger. This is succeeded by a belt of Carboniferous Limestone which extends to Gored-Girrh, near Bangor. A fault throws these rocks against a mass of igneous rock which runs from Caernarvon to Bangor, and separates the Carboniferous strata from the Silurian and Cambrian rocks of the adjoining district. Carboniferous Limestone is also found at Great Orme's Head, and to the south-east of it near Eglwys Rhos. The most important quarries in the Carboniferous Limestone are Llysfaen and Pentre Gwynedd, Abergele, 3 miles, Mosses, Rneshaw, Lupton, and Co. (240 men); Llysfaen, Abergele 3 miles, Messrs. Raynes and Co. (182 men); Little Orme's Head, Llandudno, 2½ miles, the Little Orme's Head Limestone Co., Ltd. (81 men). There are several small quarries in the same rocks within a mile of Llandudno. The Denbigh grits, which are local representatives of the Wenlock Series, consist of shales, flagstones, and sandstones; they are seen at the mouth of the Conway, from which place they extend to Melenydd; the sandstones are used for rough walling only. The rocks of this age are calcareous in Shropshire, the nodular limestones being burnt for lime at Wenlock; but in this district they are arenaceous and flaggy. Tarannon shales, like the Denbigh grits just described, are found only in the extreme north-east of the county by Conway, from which place they extend to Builth in Radnorshire. They underlie the Denbigh grit, and form the lowest part of the Silurian rocks in this county, which rest unconformably on the underlying Cambrian strata. The Tarannon shales are slates and shales of various colours. The surface rocks of the east, centre, and south-west of the county are Silurian, not yet separated by the Geological Surveyors; all over this area there are great masses of intrusive igneous rocks. There are important slate quarries in these Silurian rocks, some of the most noted being Glanrafon: Glanrafon Siding, Glanrafon Slate Quarry Co. (240 men); Bettws-y-Coed: Bettws-y-Coed Slate Quarry Co., Ltd.; Bwlch Cwmllan, Snowdon: Bwlch Cwmllan Slate Quarry Co., Blaen y Cwm, Ffestiniog: Blaen y Cwm Slate Quarry Co.; Crffnant, Trefriw, Mr. J. W. Williams; and Penllyn Dolwyddelan, Mr. T. Mandle. The Bala beds are sandstones, sometimes flaggy, shales, slates, and limestones, much interbedded with felstones and volcanic ashes. They are found at Carnedd-dafydd, Y-Glyder-Fawr, Snowdon, and Moel Hebog, crowning the mountain heights. Lower down in the same mountains thick beds of trap rocks and ashes are found, which were deposited during the much earlier Llandeilo times. Tremadoc slate rocks are slates, flags, and sandstones, found in the Cambrian rocks west of Tremadoc, and other places in the county. They are used chiefly for rough walling. Lingula Flags are well developed. They are seen near Bangor and Portmadoc to consist of

altered slates, grits, and sandstones, with intrusive dykes and bosses of igneous rocks. In North Wales the Flags of this series are usually divided into Dolgelly, Ffestiniog, and Maentwrog beds, which consist of soft black, hard blue slates, micaceous flags, pyritic flags, and grey-blue slates. The Cambrian rocks include the Llanberis slates and grits, in which are the two most important slate quarries in the British Isles—viz., Penrhyn and Llanberis. These supply more than one-half the entire roofing slate raised in the Principality. The slates worked West of Snowdon no doubt all belong to the same bed; but it has been so tossed about by earth movements, due to igneous action, that it is repeated many times in the same locality. The actual slate bed lies between the metamorphic rocks of Bronllyd on the east and a ridge of greenstone on the west. It is equally upthrust against these rocks on both sides; consequently it dips to the centre at an angle of about 45°. The thickness of the bed of good slate, which is known by its rich purple colour, with green spots and green lines at the junction of the bedding, is about 200ft. Underlying it is another bed of slate of the same colour, but too hard for use. Beneath this comes a hard green slate, followed by coarse schists, the whole resting on the igneous rocks of the district. Though the purple slate is so well known in many places, they really form a single bed which reaches from Aber, near Bangor, south to Llanllfni. Everywhere along this line the slates overlie the coarse schists of the Snowdon chain.

The most important slate quarries in the Cambrian rocks are Penmaenmawr, 1 mile, Mr. G. W. Ashton, South, 600 men; 2,000 men; Penrhyn, Bethesda, 1 mile, Lord Penrhyn, 2,740 men; Penyrorsedd, Nantlle, 1½ mile, Penyrorsedd Slate Quarry Co., Ltd., 553 men; Dorothea, Nantlle, 1 mile, Dorothea Slate Quarry Co., Ltd., 490 men; Cilgwyn, Nantlle, Cilgwyn Slate Co., Ltd., 347 men; Glynrhonwy, Llanberis, 1 mile, Glynrhonwy Slate Quarry Co., Ltd., 275 men; Moel Tryfan, Bryngwyn, ¾ mile, Moel Tryfan Slate and Slab Co., Ltd., 258 men; Talysarn, Nantlle, ½ mile, Mr. T. Robinson, 250 men; Alexandra Bryngwyn, 2 miles, Alexandra Slate Co., Ltd., 231 men; Upper Glynrhonwy, Llanberis, 1½ mile, Upper Glynrhonwy Slate Co., Ltd., 185 men; Ceindru, Llanberis, 2 miles, Llanberis Slate Co. Ltd., 155 men; Coed Madog, Nantlle, Coed Madog Slate Co., Ltd., 150 men; South Dorothea, Nantlle, ½ mile, Mrs. M. Dawkins, 120 men; Cloddfa'r Coed, Nantlle, Mr. T. Robinson, 104 men; Gallt y Fawr, Nantlle, 1 mile, Gallt y Fawr Slate Quarry Co., Ltd.; New Vronheulog, Nantlle, 1½ mile, New Vronheulog Slate Co., Ltd.; Braich, Bryngwyn, 1 mile, Mr. T. Robinson; Pant Dreiniog, Bethesda, ¼ mile, Bangor, Slate, Slab, and Quarry Co.; Cook and Ddcl, Llanberis, 1½ mile, Cook and Ddcl Slate Quarry Co.; Penybryn, Nantlle, 1 mile, Dorothea Slate Quarry Co.; Tynyweirglodd, Penygroes, 2 miles, Tynyweirglodd Welsh Slate Quarry Co., Ltd.; Vron and Old Braich, Bryngwyn, 1½ mile, Vron and Old Braich's Slate Quarries, Ltd.; Bwlch-y-Groes, Llanberis, 2 miles, Llanberis Slate Co., Ltd. There are slate mines at Penmachno, Bettws-y-Coed, 1 mile, Penmachno Slate Quarry Co., Ltd., Rhiwbach, Blaenau Ffestiniog, 3½ miles, Rhiwbach Slate Quarry Owners; and Prince Llewellyn, Dolwyddelan, ½ mile, Prince Llewellyn Co., Ltd.

Pre-Cambrian rocks are, according to Dr. Hicks, the so-called intrusive rocks at Caernarvon and Llynpadarn, and the altered Cambrian of Moel Tryfan and Talysarn. Pre-Cambrian areas are identified at Glynllifon, Craig-y-Dinas, and in the Llyn Promontory. Professor Hughes classifies the Pre-Cambrian rocks in the neighbourhood of Bangor and Caernarvon thus: (1) Granitoid Series, the "Caernarvon Beds"; (2) Felsitic Series, "Dinorwic Beds," quartz felsites of volcanic origin, near Llandeiniol and Dinorwic; and (3) a Volcanic Series, "Bangor Beds," consisting of volcanic fragmentary ejectamenta, agglomerates, and ash beds. The Caernarvon Beds are again subdivided into Upper and Lower, the former being the pink and grey, compact, fine-grained, felspathic rocks of Crug; and the latter the coarse, crystalline aggregate of quartz and feldspar, which forms the base of the Cambrian System at Twt Hill. During the deposition of the Lower Silurian rocks, volcanoes in the Snowdon district poured out immense lava flows and showers of dust and ashes. These latter fell into the sea, forming beds 2,500ft. thick in some places, this huge deposit being the result of many violent eruptions. Snowdon itself consists of a

A memorial to the late Duke of Westminster has been erected by his nephews and nieces in Aldford Churchyard, upon the Eaton Estate. It bears sculptured representations of the Crucifixion, the Virgin Mary, St. John the Evangelist, and St. John the Baptist on the four sides of the column, and occupies the site of an ancient praying-cross. The treatment is 15th century in character; the column is of Runcorn stone, and is 11ft. in height. Mr. F. G. Sewell, of Chester, carried out the work.

COMPETITIONS.

the old part of the town, and, surrounded with quaint thatched cottages, forms a picturesque scene for the eye of the artist, and the eye of the poet. It is a fine example of the Perpendicular style, with nave, chancel, north aisle, and western tower. The interior is richly decorated. St. Andrew's shire churches, contains a very fine oak roof-screen of the 15th century, and it has a quaint Jacobean altar. The late Mr. J. P. St. Aubyn restored the building. We gave two views of the church, formerly Mr. Moore's. B. Alois, in the *Birmingham News* for April 19, 1867, with plan, and Jan. 6, 1869. *H. H. H. H. H.*

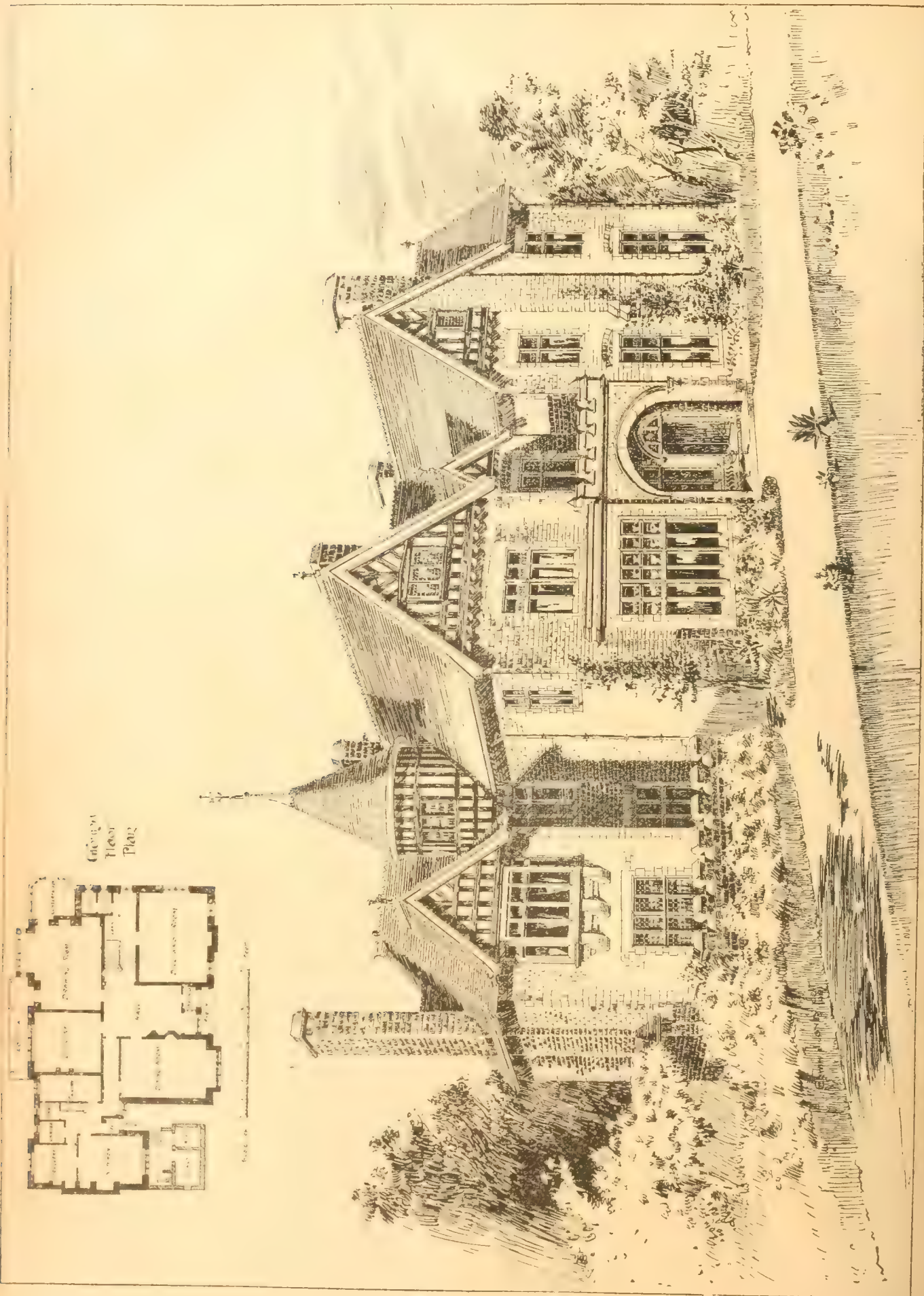
Rothland.—This interesting old stone house is situated about three miles from Oakham, and is a good example of one of the smaller works of

Our Illustrations.

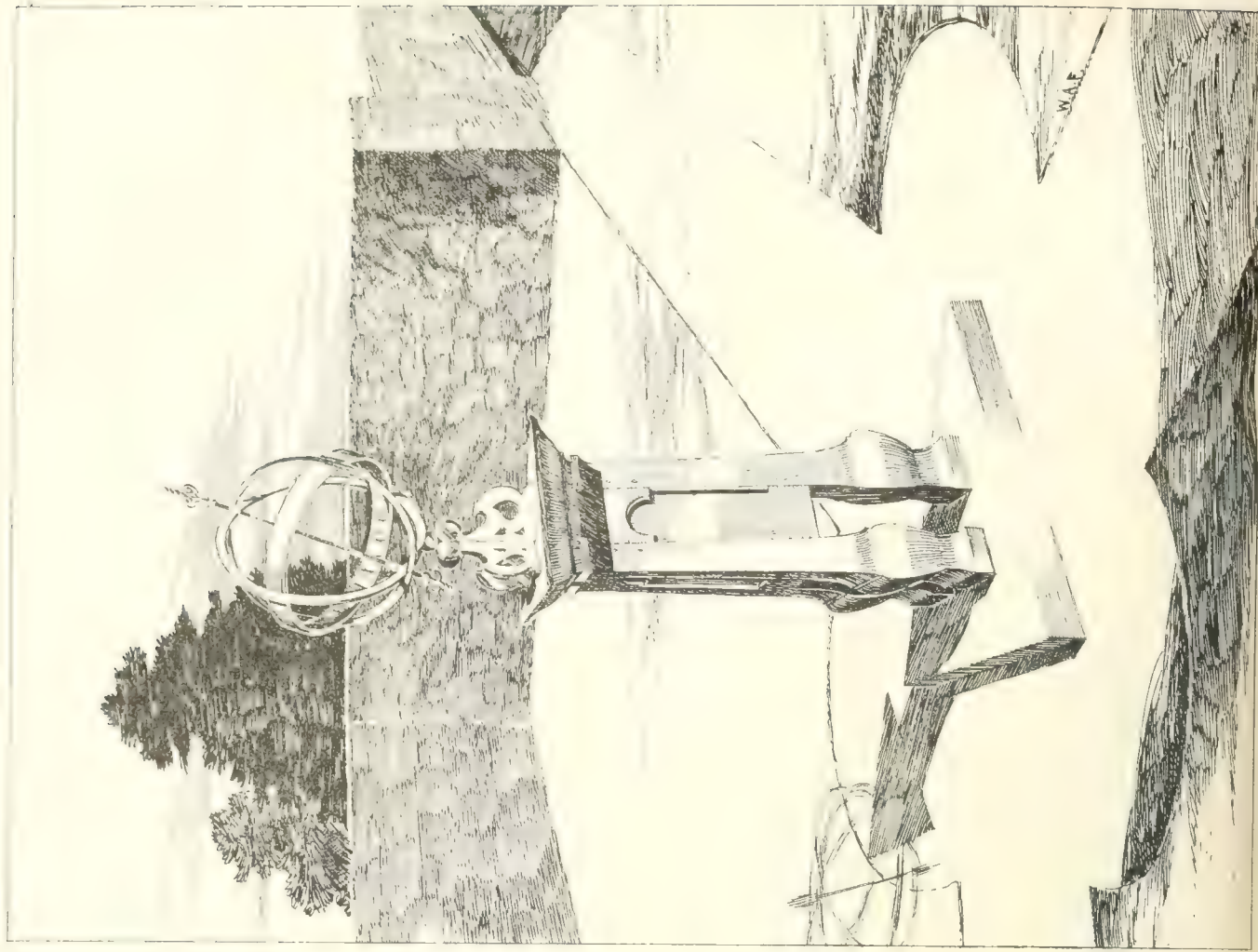
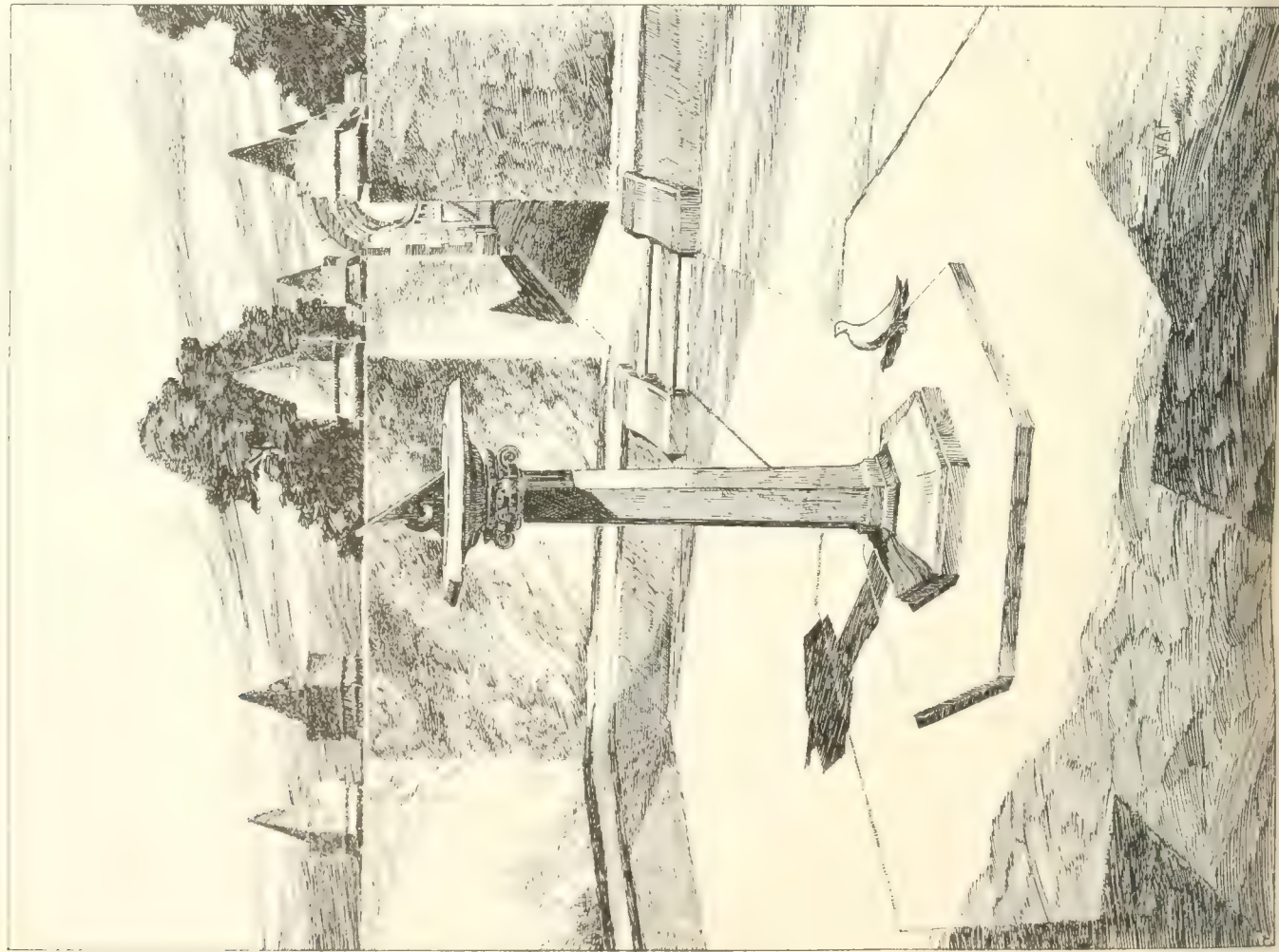
THE Leeds School Board, who have always been foremost in meeting the requirements of educational progress, determined some years ago to erect a building for the training of pupil teachers. For this purpose they secured a site in Great George-street immediately adjoining their Central Higher Grade Schools, and the building which we illustrate has been erected at a cost approaching £30,000, exclusive of the value of the site. The planning and designing of this building was placed by the Board in the hands of Mr. J. Mitchell Bottomley, of Leeds and Middlesbrough. The instruction of the Board as to the design of the building was that, so far as possible, the architecture of the proposed new building should be in accord with that of the adjoining Central Higher Grade Schools. A block plan showing the relative positions of the Central Higher Grade Schools and the Pupil Teachers' College is given in our illustration, together with a plan of the arrangement of the ground floor of the latter. The accommodation given on the first floor is similar to that provided on the ground floor, and the rooms are approached from a gallery round the central hall. The basement is entirely occupied by workshops and by rooms for the teaching of cookery. The second floor is devoted to rooms for the teaching of art and science. Cloak-rooms and lavatories are provided on the several floors, as well as on the mezzanine floors, and there are private rooms for the teachers in each department. The building is warmed and ventilated throughout. The floors are fireproof at all levels, and have been constructed by Messrs. Homan and Rodgers, of Manchester. The contractor for the

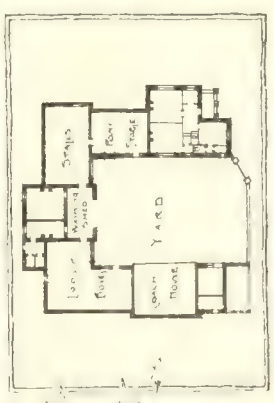
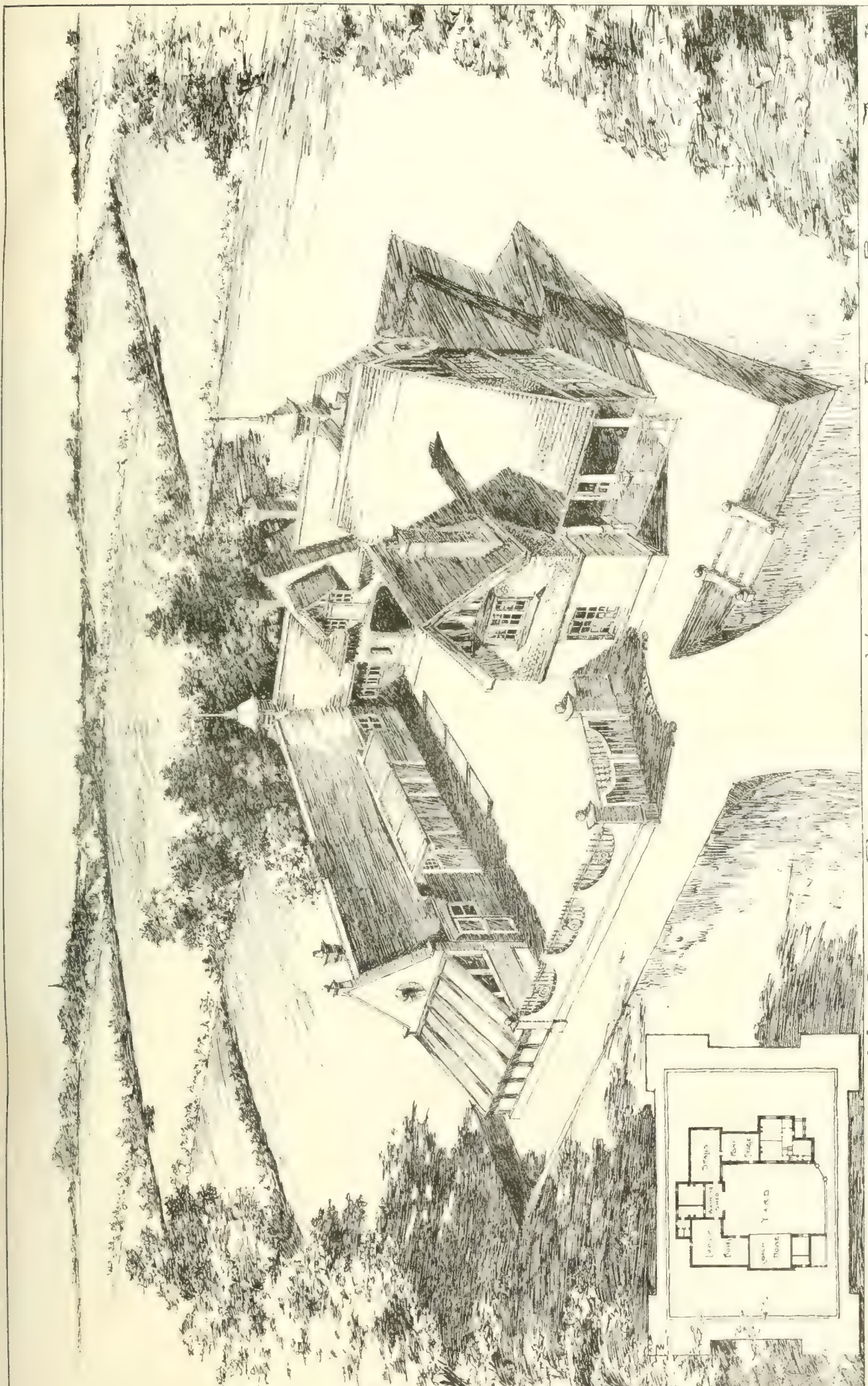
A new Masonic hall at Saltmead, Cardiff, was opened on Monday. The building has cost over £2,200.

Satisfactory progress continues to be made with the laying of the rails for the electric tramways between Ayr and Prestwick. The portion from the north end of the new bridge southward to St. Leonard's Church, the present terminus, over a mile in length, has been completed, while the work is proceeding northward from the new bridge along Main-street. The completed portion of the line, from the new bridge to the Grammar School, nearly a mile, is double, and beyond that to St. Leonard's Church it is single. This section will be continued single out to Burns' Monument at Alloway, and the continuation out to Prestwick will be double. A commencement has also been made with the additions to the electric works in Hill-street for the accommodation of the additional electrical machinery, and with the car-station on Prestwick-road.



"HOLME TOWER" PENARTH, WALES. EDWIN J. JONES, M.S.A., ARCHT.





PROPOSED STABLES AT PLAY LODGE : DRAWING : MENTFORDSHIRE : BROWN & BARROW : ARCHT'S :



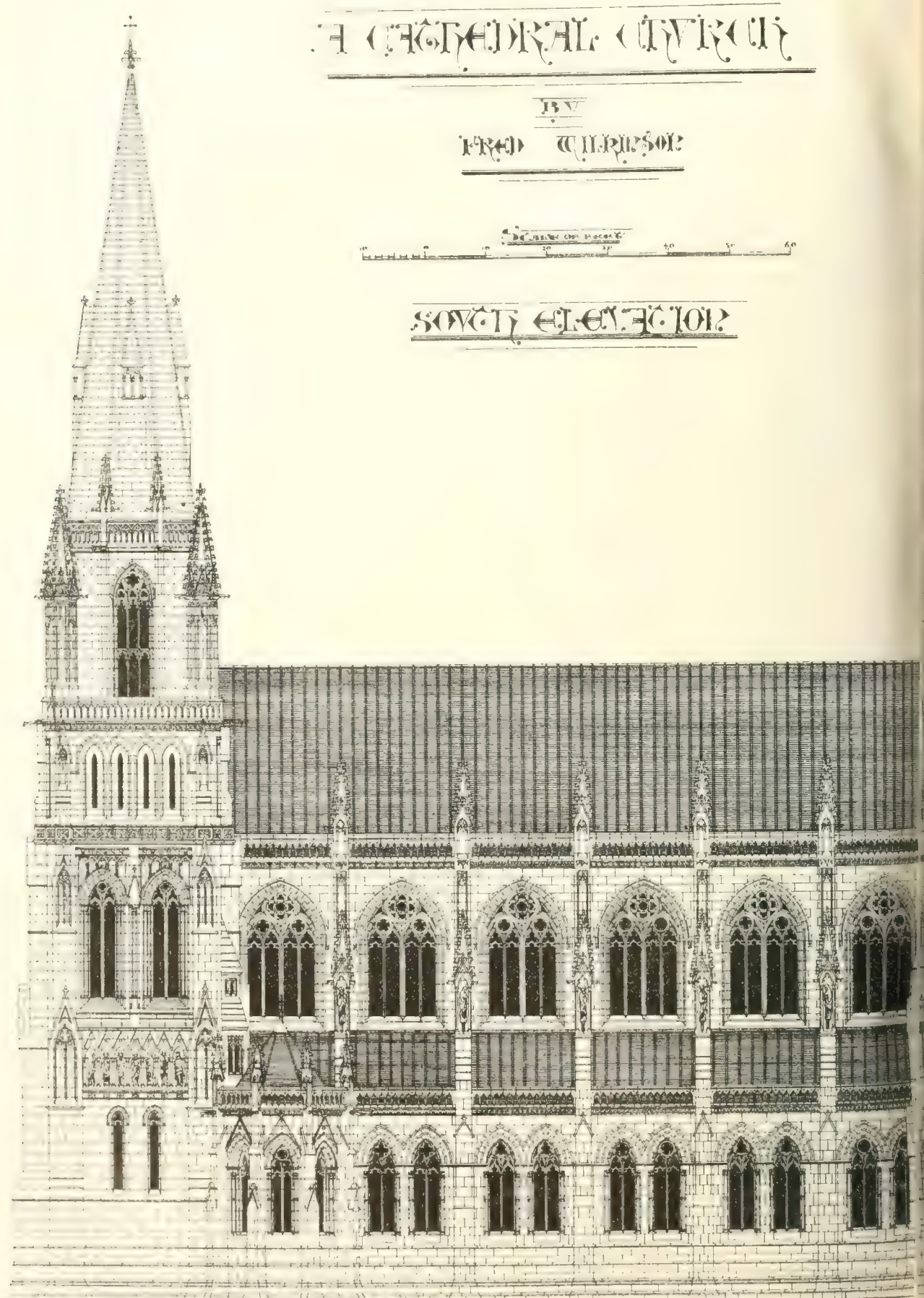
· NATIONAL · SILVER · MEDAL · AWARDED ·

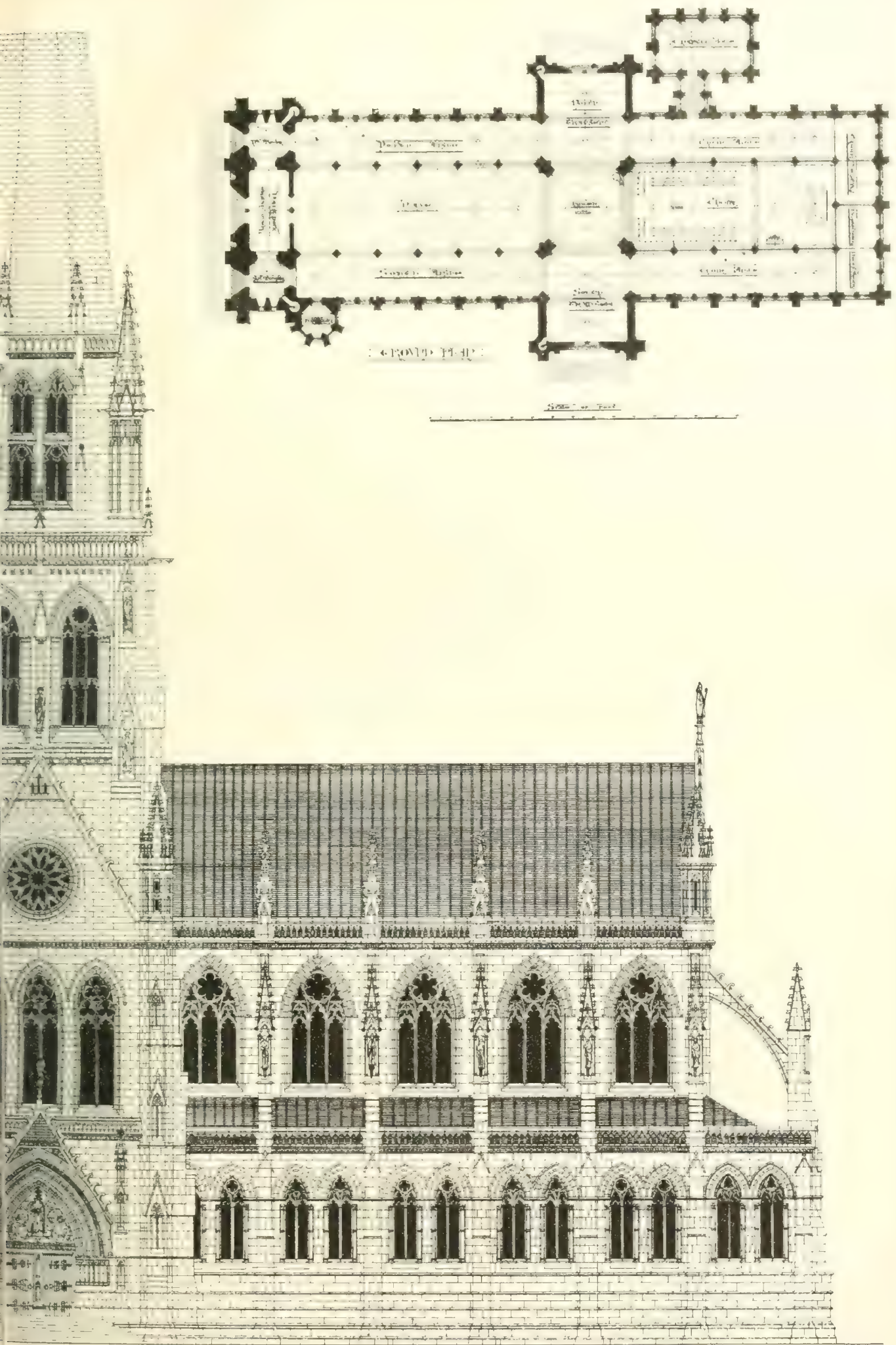
THE CATHEDRAL CHURCH

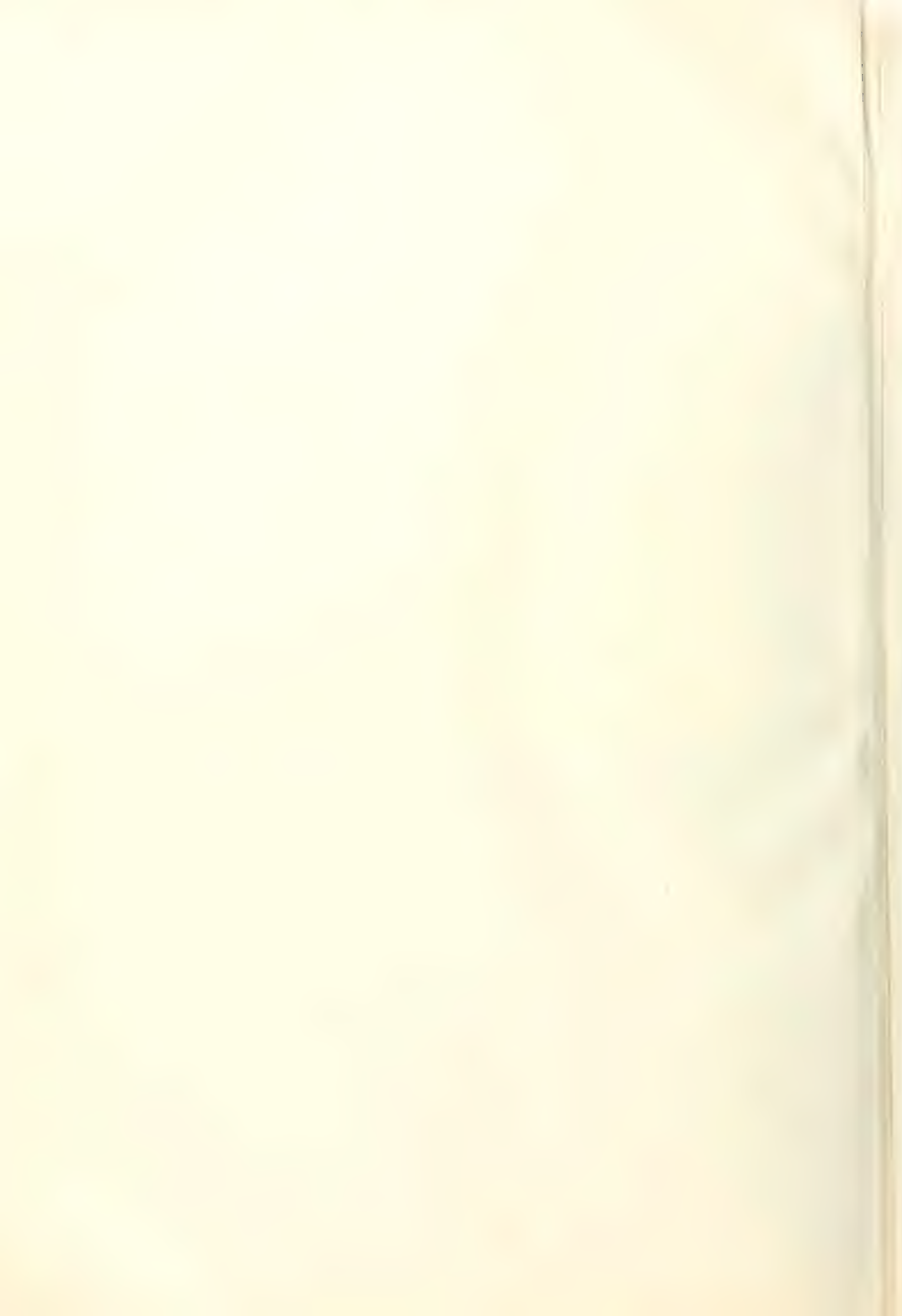
BY
FRED. WILKINSON

SCALE OF FEET
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SOUTH ELEVATION







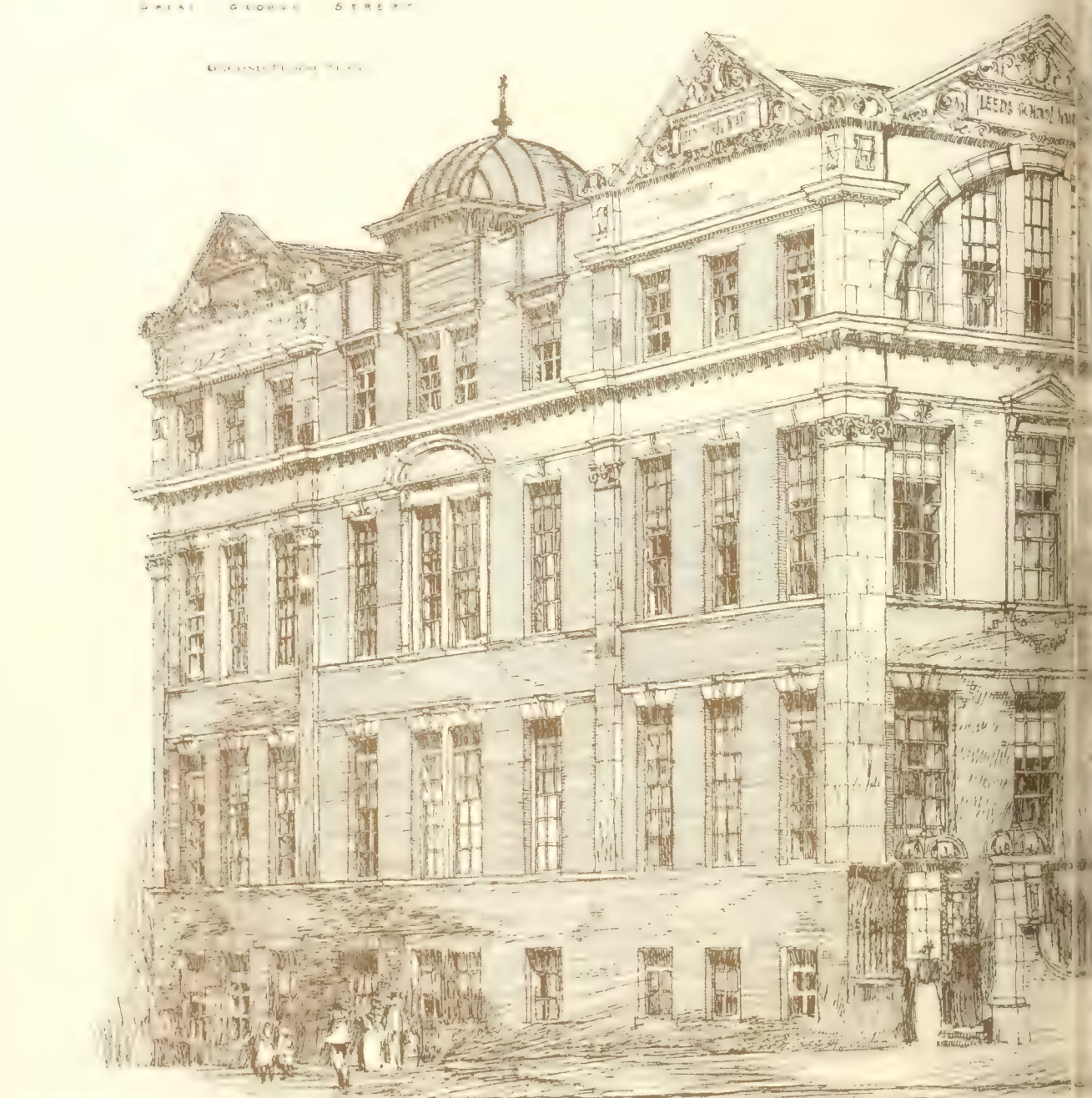




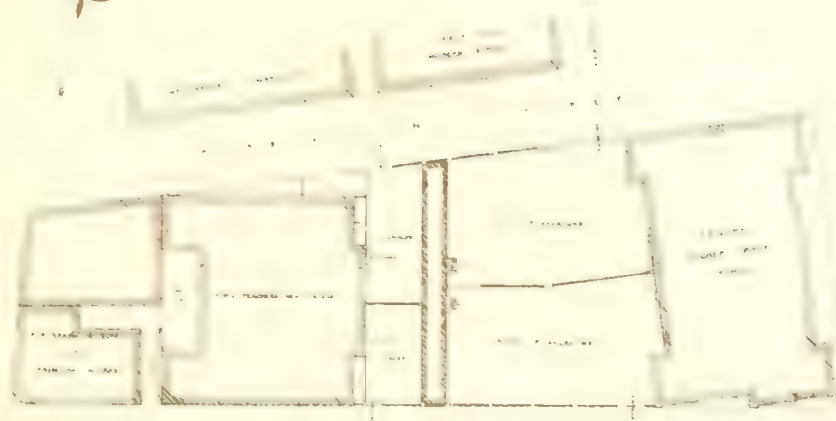
TRAINING COLLEGE FOR WOMEN
LEEDS SCHOOL BOARD
J Mitchell Bottomley
Architect

GRAND GEORGE STREET

SECOND FLOOR PLAN

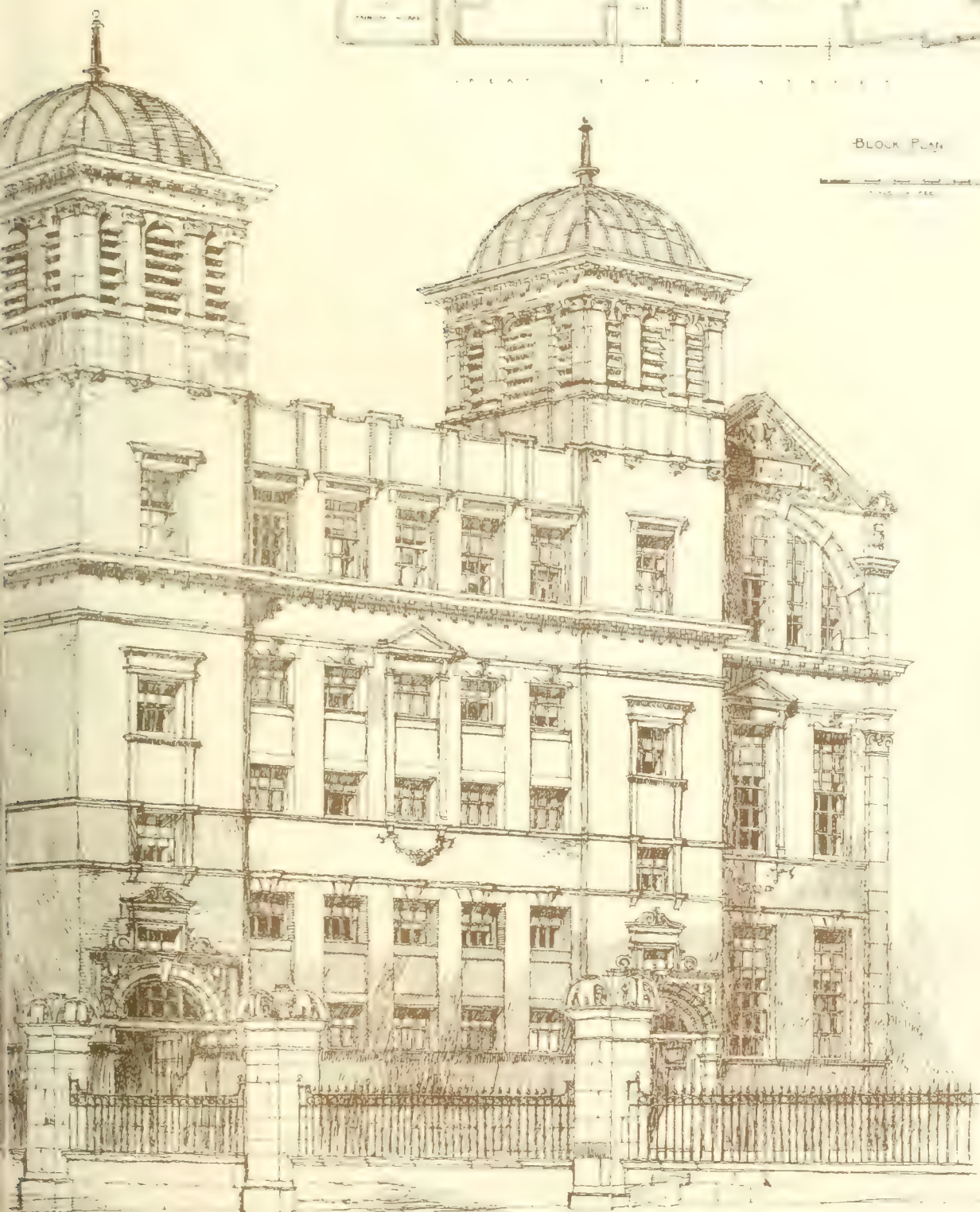
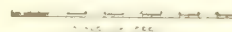


TEACHERS.



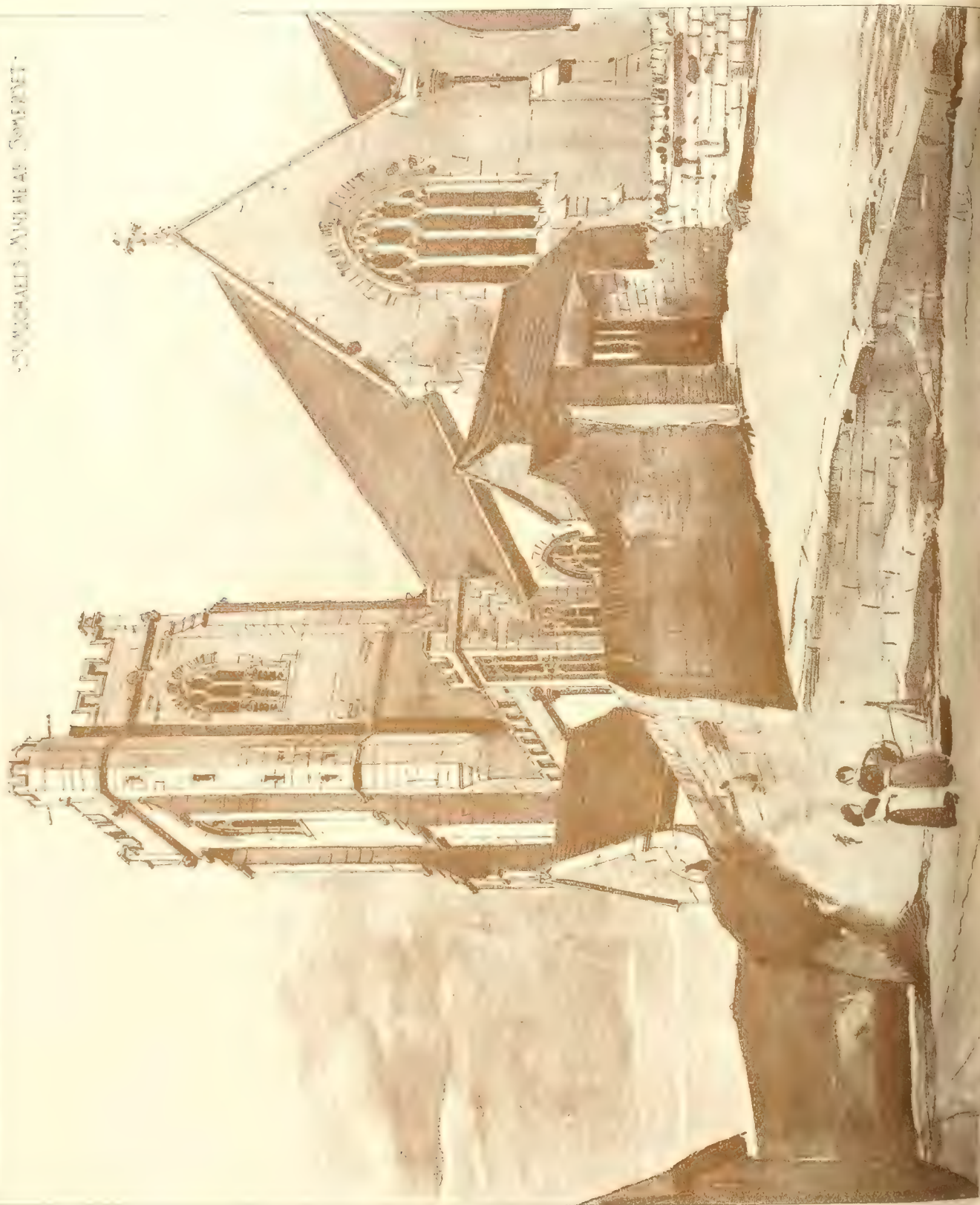
PLAN OF BUILDING

BLOCK PLAN





ST. MICHAEL'S AND HEAT SOMERSET.



Shirley Harrison
Hambleton Old Hall
Lincolnshire
Samuel

• HAMBLETON OLD HALL, LINCOLNSHIRE •

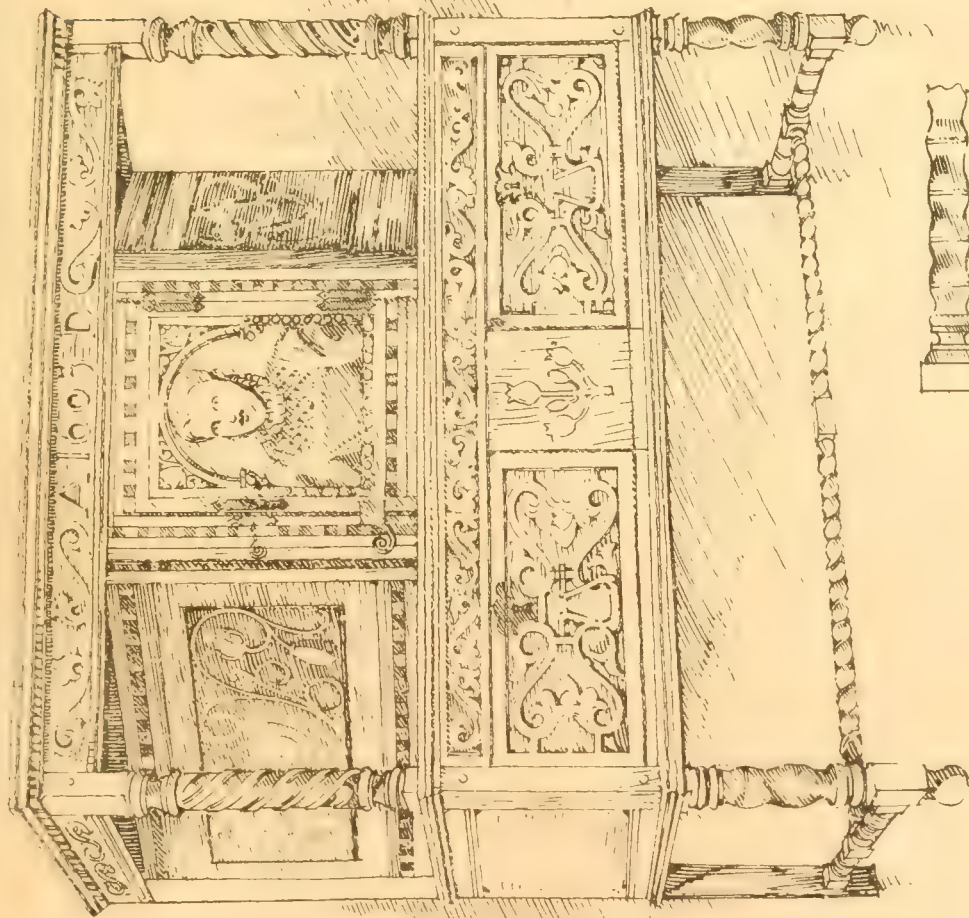


▼ DOGIA STUDENTS' ART COMPETITION DRAWINGS ▼ BY SHIRLEY HARRISON ▼

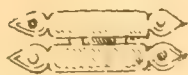
1900

COURT COVEBOARD AND HALL CHAIR

JACOBEAN PERIOD



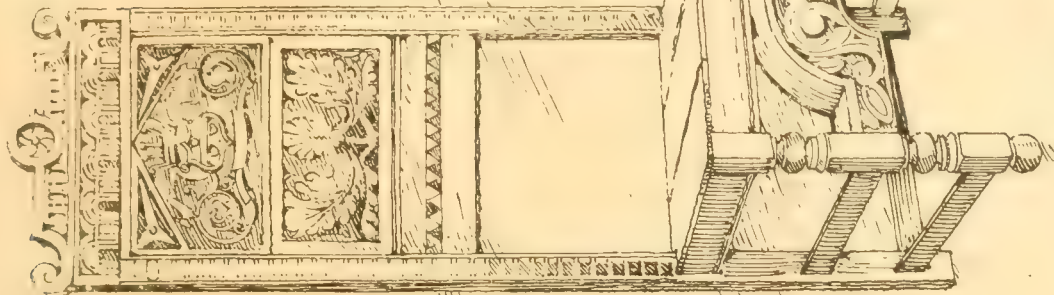
DETAIL OF STRETCHER BAR



BEATEN ANGLE



ESCUTCHEON TO COVEBOARD



A

B



DETAIL OF CARVED OAK CHAIR



DETAIL A



DETAIL B

W. J. C. & S.

- CARVED OAK CHAIR 17TH CENTY -

NOTICE.

Intercommunication.

of FISHES.

"I am not a lawyer, but I am the father of the law,"
 said the old Senator, and he told me how he had
 been elected to the Senate from the State of
 New York, and how he had been elected to the
 Senate from the State of New York, and how
 he had been elected to the Senate from the State
 of New York, and how he had been elected to
 the Senate from the State of New York.

TO CORRESPONDENTS.

We intend to be responsible for the opinion of our correspondent. All communication should be drawn up as briefly as possible, there are many elements upon the paper allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter should be addressed to the EDITOR of the *Encyclopædia Britannica*, 10 North Chamberlayne House, General's Inn Passage, Strand, W.C., and not to members of the staff by name. Delay is not to be excused, if it is caused. All drawings and literary communications are sent at contributor's risks, and the Editor will not undertake to pay for, or be liable for, material contributed by

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NOTES.

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Handsome Cloth Cases for Binding the BUILDING NEWS, price 2s., post free 2s. 4d., can be obtained from any Newsagent, or from the Publisher, Clement's House, Clement's Inn Passage, Strand, London, W.C.

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511 110000

The charge for advertisements for "Situations Vacant" or "Situations Wanted" is ONE SHILLING for TWENTY-FOUR Words, and SIXPENCE for every eight words after. *Advertisements must be prepaid.*

RECEIVED.—F. S. and Co.—W. A. B.—D. D. S.—J. B.—
E. C. S. and Co.—W. M. B.—F. E. A.—H. S. W.

"BUILDING NEWS" DESIGNING CLUB.

DRAWINGS RECEIVED: "Quercus," "Quilt," "1901,"
"Patty," "Joyce," "Pumpkin," "Laser," "Robin Hood,"
"Cow Charm," "Penel Point."

Correspondence.

THE QUEEN VICTORIA MEMORIAL.

To the Editor of the BIRMINGHAM NEWS.

SIR:—This matter is of such great importance to architects and sculptors, that I have written to the Secretary of the R. I. B. A., asking for facilities to call attention to the subject at the business meeting on Monday next, the 15th inst.; this to be followed up by an open meeting in the large room of the Institute. I hope that the meeting will be a good, representative one. I am, &c.,
14, Southampton Street, Wm. Woodward,
Strand, W.C., April 10.

Fat Lime Mortar. I am informed that a very successful recipe for a Fat Lime Mortar consists of 1 part of Portland cement mixed with 4 parts of Fat Lime, in which the cement, and with a much larger proportion of sand, and that blue lias lime will carry more sand than white. In this case, and in what is the best, the white Portland cement and the blue lias lime should be in the proportion of 1 to 4, and the sand should be 5 times the weight of the cement. The usual mixture of hydraulic lime and sand is of 2 to 1. As a result of that sand mixed with Portland cement mixed with Fat Lime in the above high proportion. If so, what proportion of cement should be used? I have not ventured to get build a house, I therefore mention it with a proportion of 1 to 4 for mortar, of sand, but the mixture is so brilliant as to be almost unwieldy. What is the best proportion of Fat Lime that should be added to a blue lias mortar for use? I mention that shall eventually become as strong as blue lias lime mortar of the usual proportions! A reliable answer will greatly oblige. H. H. H. H. H.

11794 **Heating Water in Bath.** I am told that in France bath water is heated by means of a charcoal stove, the stove being put into the cold water in the bath rapidly brings it to the required temperature. Can such stoves or suitable powerful oil-stoves be procured in England. They would be a great boon in country houses or where there is no water supply.—HYDRAULIC.

[11704].—**Labour and Material.**—In the BUILDING NEWS of March 29 an average cost of trades in ordinary buildings was given. Will someone kindly give the average relative cost of labour and material for each trade, and oblige—ALFRED.

[11705].—**Thatching.**—Will anyone kindly inform me if I can get thatching done with reeds for a good-class dwelling-house to be built in Wiltshire, and the approximate cost per square? An Old Subscriber.

CHIPS.

An inquiry has been held at the town-hall, Yarmouth, by Lieut.-Colonel A. C. Smith, R.E., an inspector of the Local Government Board, with reference to the application of the corporation to the department for loans of £7,500 for foreshore improvements at Gorleston, and of £2,580 for paving works.

Mr. George Wragge has removed his London premises from No. 22, Surrey-street, Strand, to No. 211, Shaftesbury-avenue, Oxford-street, W., where he has a ground-floor showroom, and is exhibiting stained glass, leaded glass, repoussé and other metal work.

The second section of the electric traction system for the Plymouth Corporation tramways was opened in time for the Easter holidays. The first section was that to Prince's Rock district, and the extension now opened was to Mutley, Mummend, and Compton. The only portion of the system now worked by horse-power is that to the Hoe. The work has been carried out under the direction of Mr. J. H. Rider, late the borough electrical engineer, and now on the staff of the London County Council, and Mr. E. G. O'Kell, recently appointed his successor.

Tacket-street Congregational Chapel, Ipswich, a building French Decorated Gothic in style, erected in 1858 from designs by the late Mr. Frederick Bynes, of Ipswich, was reopened last week (the improvement, and the addition at the east end, on the site of some old cottages facing Cox-lane, of a Langston Memorial lecture-hall. The works, which have cost over £4,000, were carried out by Mr. Fred. Bennett, of Ipswich, builder, from plans by Messrs. Eade and Johns, of the same town. The organ has been reconstructed by Messrs. B shop and Sons, of London and Ipswich.

Messrs. Wm. Potts and Sons, church and turret clock manufacturers, Guildford-street, Leeds, have received instructions to erect a new clock to strike the hours and show the time upon four external illuminated dials for the Provost and Corporation of Annan, N.B.; also another hour-striking illuminated clock for Fort William, Scotland; and a new illuminated turret striking clock to be erected at Etherley Church, Co. Durham, to the memory of the late Mr. Wm. Culley Stotart, of Spellow Hill, Boroughbridge. All the above are now in hand; also another large clock for America for one of the large public companies.

The washing-houses recently erected at Locher by the Dundee Town Council were formally opened last Monday. The buildings have cost about £2,800, and contain twenty-two washing compartments and drying appliances.

On Wednesday morning, in the public offices, Egremont, Colonel Marsh held, on behalf of the Local Government Board, an inquiry as to the application of the Wallasey Urban District Council for leave to borrow the following sums of money for the purposes named: (a) £12,500, electric lighting extension; (b) £5,800, provision of public conveniences, New Brighton; (c) £5,800, works of sewerage; and (d) £3,000, for street improvements.

Messrs. E. H. Shorland and Brother, of Manchester, have just supplied their patent Manchester grates to Grove-road Schools, Hounslow.

playgrounds the janitor's house will be erected. Mr. R. Wilson, 3, Queen-street, Edinburgh, is the architect.

goods warehouse at Dewsbury, erected by Messrs. Gates and Thomas from designs by the company's architect, is approaching completion. The warehouse occupies a site on the south side of the permanent way, at the east end of the passenger station, from which it is distant about 160 yards, and is estimated to have cost from £30,000 to £35,000. The basement floor is of concrete, and the story above is supported by steel columns; as also are those of the succeeding upper floors. The structure is fireproof throughout, and is faced with stone. In order to find a site sufficiently large, the company's stabling for dray-horses had to be cleared away, after other and greater accommodation had been provided for the animals by the erection of buildings adjacent to Ashworth-road.

HULLIAN. The new work is a hospital of Hullian Union, was opened on Tuesday. The hospital stands on a site of 12 acres, about a mile from Hullian, on the Holderness-road, at Salterhebble. The plans were prepared by Mr. W. Clement Watson, F.R.C.S., of Hullian, to provide accommodation for 642 patients, in addition to beds for 100 nurses and servants. To meet the immediate requirements, the provision of 400 beds in the sick wards was thought sufficient, together with the complete scheme of administration, including the arrangements for the accommodation of the sick. These pavilions, which give provision for 400 beds, can easily be added to should the necessity arise. The cost of the scheme, as completed, amounts to £100,000, which is well under the architect's original estimate.

HISTON. The foundation-stone of the Baptist Schools, Histon, Cambs. was laid on April 8. The school is divided off into a number of classrooms by means of swivel partitions, which when thrown back make one large hall. Two other large senior classrooms are provided, also infants' room, kitchen, classrooms for boys and girls, and the usual offices. The building is of nave-and-aisle arrangement (the aisles dividing off into classrooms), has timber columns, and arcade of quaint design carrying clerestory. The whole of the internal joinery is to be stained transparent olive green and varnished. The external facing is of red brick, with Bath stone dressings; roof of green slates. The contract is let to Mr. H. Feast, builder, Haddenham, Cambridge, and amounts to £1,852 (architect's estimate, £1,875). The architects of the above, and also of the church recently completed, are Messrs. Geo. Barnes, F.R.I.B.A., and Reginald Palmer Barnes, 5, Clement's Inn, Strand, W.C.

MANCHESTER.—At the last meeting of the city council the sanitary committee presented a series of recommendations. They desired, in the first place, authority to apply for sanction to borrow £60,000 for the purpose of building 203 dwelling-houses on the Blackley estate, to provide accommodation for the people who have been displaced by the improvements in Long Millgate, Rochdale-road, and New-street, Ardwick. The cottages are to be built after the style of those recently erected by the Corporation at Miles Platting. The committee also required a further sum of £4,651 19s. 2d. in respect of the labourers' dwellings in Oldham-road, Pollard-street, Harrison-street, Chester-street, and Pott-street. The city surveyor's estimate, it was explained, had not been exceeded, but certain extras had been ordered by the committee. A further sum of £14,500 is required by the committee on account of the proposed extensions. The committee also suggested that the council should sanction an application for leave to borrow £21,000 for the provision of underground lavatories.

LEGAL INTELLIGENCE.

THE DEFINITION OF A "DANGEROUS BUILDING."
 At the Manchester County Police-court on Monday Mr. J. M. Yates, K.C., the stipendiary magistrate, gave the decision of the Bench in the case of the Swinton and Pendlebury Urban District Council v. Messrs. Watson, Woodhead, and Wagstaffe, brewers. On April 2 Mr. Postlethwaite, the clerk to the council, applied to the Bench for an order, under section 32 of the Housing of the Working Classes Act, 1890, to close the British Queen Inn, North Dean-street, Pendlebury, on the ground that it was in a state so dangerous or injurious to the health as to be unfit for habitation. It was said that the defendants had tried to comply with the by-laws of the council when plans for the rebuilding of the house had been presented and rejected, that the premises were not unfit for habitation from a sanitary point of view, that the proceedings were not in accordance with the Act, that such a house was not within the provisions of the Act, and that the proceedings were taken under the wrong section. Mr. Yates, in his decision, said that on April 1 the council's surveyors had reported to them that the house was in a dangerous condition. One of the walls was 13in. out of the perpendicular, and another fronting Dean-street was 7in. out, some of the cross-walls were broken and bent, and one of the floors was 18in. lower at one end than the other. No evidence was given that this statement was not accurate; but it was said by a witness for the defendants that the house could be made safe for the present. As the injury was caused by mining, it might, however, recur. It was also proved that the cottages adjoining the house, which were in a like condition, had been pulled down. Upon these facts, the Bench were of opinion that the house was so dangerous as to be unfit for habitation. It was contended for the defendants that the Act did not apply to houses such as these, and that, if it did, that "dangerous" meant dangerous in a sanitary sense. The definition of a "dwelling-house" in the interpretation clause defined it to be any inhabited building, and included the site. It was impossible to say that this was not an inhabited building, and it was not for them to limit the wide definition of the Act. Then, "dangerous" meant in a sanitary sense. The section of the Act did not so limit it, but it said "dangerous or injurious to health," and they thought the section meant to deal with two sorts of property—one that was dangerous, and one that was injurious to health. The intention of the Act was, no doubt, to protect tenants against owners who neglected their duty; but it was wide enough to include those who were willing but unable to do it; and the Court thought that must be the true construction of the Act, as by the same section the justices were empowered to close a house whether it was occupied or not. It was clear that, if unoccupied, its sanitary condition would not be likely to affect the inhabitants; but its dangerous condition might well do so. In this case it was of the more importance that there should be this power, as the public were, by the very nature of the business carried on, invited to come to the house; and if any accident were to occur, the blame would rightly fall on the Council for not putting in force their powers. The attention of the Court had been called to the Towns Improvement Clauses Act (section 75). Though this Act dealt with dangerous buildings, and proceedings might perhaps have been taken under it, yet it did not oust the wide power of the other Act. This being the view of the Court, they ordered the house to be closed. A case was granted.

In a few weeks the whole of the Glasgow tramways will have been converted for electric traction, and the whole of the horse-cars withdrawn from the streets.

The town council of Workington have decided upon the building of a new bridge across the river Derwent, the bridge to commence practically at the churchyard corner at Northside, and to end at Low William-street on the other side of the river. The cost in stone is estimated at £15,643, but if iron girders are substituted for stone the cost is estimated at £14,900. It was also agreed on the recommendation of the Housing of the Working Classes Committee, if land can be obtained in Blackburn-street on satisfactory terms, that tenders be obtained for erecting 16 workmen's houses.

The Committee of the fund for providing a memorial of the late Bishop of London, Dr. Creighton, which now amounts to £2,525, have decided that a statue of the Bishop in Carrara marble, with an appropriate pedestal, shall be executed by Mr. Hamo Thornycroft, R.A., and placed in the south choir aisle of St. Paul's Cathedral, at a spot selected by the Dean and the sculptor. The cost of the statue will be £1,800. The committee also propose to provide a portrait of Dr. Creighton for the Episcopal collection at Fulham Palace and one for the National Portrait Gallery, of which he was a trustee. These portraits will cost about £800.

Our Office Table.

The opening of the New Century Hotel in Glasgow, which has taken place this week, marks a new departure in lodging-house accommodation. In every city of any importance the homeless labouring-class man is catered for in what is known as the model lodging-house style of building; but there is a middle, or respectable artisan class, for whom the ordinary hotel charges are much too high, while model lodging-house associations are not what is wanted. This is the class for whom the New Century Hotel will cater. In it may be had all the comforts and conveniences of the highest-class hotel, at a very moderate charge—something between 4s. and 6s. per week. Breakfast and tea may be had at ordinary rates, and a substantial dinner of three courses for 1s. The building is situated in Holm-street, and has been erected by Mr. Thomas Paxton. It consists of seven stories, including a basement flat, and, in addition to about 400 light, airy, and comfortably-furnished single bedrooms, has a large and a small dining-room, a writing or reading-room, a billiard-room, and all other necessary accommodation.

Messrs. Charles Hobson and W. T. Gent, members of the Sheffield City Council, who have visited the flag-making plant at the Birmingham Destructor, report to the health committee of the former city that the Birmingham Corporation have made a large number of flags, and are turning out about 350 yards per week. The flags appeared to be well made in every way. The Birmingham superintendent gave several reasons why he considered the flag-making plant at Bradford had not proved a success. They had experienced similar difficulties, but had found out the remedy. No fault could be found with the flags as turned out in Birmingham. The flags are kept under cover for three days, and are then taken out into the open air. The superintendent was decidedly of opinion that there would be an advantage if the flags could be kept under cover a longer time. Messrs. Hobson and Gent recommended that a clinker-crushing mill and a machine for mixing cement and clinker should be erected at the Lumby-street destructor at an estimated cost of £195. The Birmingham Corporation have agreed to send a man for a month when the Sheffield Corporation commence this work. The health committee of the latter body recommend that Messrs. Hobson and Gent's recommendations be carried out.

An address on the "Bacteriological Treatment of Sewage" was delivered last week before the members of the East of Scotland Engineering Association at 18, George-street, Edinburgh, by Mr. Allan Carter, M.Inst.C.E. The lecturer remarked that, although much was being said about the new method of treating sewage by bacterial agency, there was really no novelty in this application of biological science, which had been acting naturally in all times past; but what was new was our knowledge of what actually took place in the various processes and stages of decomposition of organic matter. The lecturer showed that in the old cesspool, once so common in this country, the sewage was being treated in a very rough and insufficient way by bacterial agency, and again when applied to land by broad irrigation, and still more when dealt with by downward intermittent filtration, such purification as was effected was brought about by bacterial means. Many of the failures which had occurred in connection with sewage farming were due to the employment of an insufficient area to deal with the quantity of sewage poured on to it. Mr. Carter proceeded to show how they were now assisted and directed in the work of sewage purification, and it was pointed out that in what was now called the septic tank a perfectly specific operation was carried through.

The housing question in Prussia is becoming an increasingly difficult problem for the Government, owing to the scarcity of dwellings and the increase of rents, especially those of industrial property. The results of investigations have just been published in the official *Reichsanzeiger*, which contains two Rescripts, one directed to the Presidents of the Prussian Provinces, the other to the Presidents of the Governments. They place the principal responsibility for applying energetic remedies in the hands of the individual communities, promising, however, that the State will place money for building purposes at their dis-

posal at a low rate of interest. These documents further state exactly the principles upon which new houses are to be built, especially recommending co-operation with the building trades-unions, which are likewise to receive money on favourable terms. They also lay down sanitary regulations that are considered urgently necessary, and recommend the erection of healthy dwellings, especially for their own subordinate officials and workmen, to all the Governmental and Municipal authorities, and all the other Corporations.

The Committee of Experts appointed by the Prussian Government some time ago to report on devices for preventing or abating smoke from fires and furnaces recently concluded its inquiries, and the measures it proposes will shortly be notified. The ministers, however, have already instructed the managers of State factories, &c., to do all they can to prevent or consume the smoke from their fires, and, if necessary, to have smoke-consuming appliances constructed. Municipal and provincial authorities have also been asked to do the same, and it is pointed out that, according to the report of the committee, they will not suffer any pecuniary loss. The Minister of Commerce has also instructed the presidents of all the provinces to take steps for preventing the unnecessary production of smoke, and, if need be, to issue regulations.

MEETINGS FOR THE ENSUING WEEK.

MONDAY.—Surveyors' Institution. "The Rating of Public Houses," by Walter C. Ryde. 8 p.m.

Royal Institute of British Architects. Business Meeting. 8 p.m.

Liverpool Architectural Society. "Old English Architecture: a Retrospect and a Suggestion," by A. S. Flower, M.A. 6 p.m.

TUESDAY.—Institution of Civil Engineers. "Modern Practice in the Manufacture and Distribution of Gas," by Harry E. Jones, M.I.C.E. 8 p.m.

Society of Arts. "Greek Vases: their Evolution of Form and Ornament," by Cecil Smith, LL.D. 8 p.m.

WEDNESDAY.—Building Trades' Exhibition opens at the Agricultural Hall, Islington.

Society of Arts. "The Synthesis of India," by Professor Raphael Mendola, F.R.S. 8 p.m.

Edinburgh Architectural Association. "Lunatic Asylum: Design from a Medical Point of View," by Sir John Sibbald. 8 p.m.

THURSDAY.—Society of Arts. "Madras, the Southern Gateway," by J. David Rees, C.I.E. 4.30 p.m.

FRIDAY.—Architectural Association. "The 18th Century Architecture of Italy," by A. Green. 7.30 p.m.

SATURDAY.—Edinburgh Architectural Association. Visit to Duddingston House and Church.

THE ARCHITECTURAL ASSOCIATION.

APRIL 12th. ORDINARY GENERAL MEETING. No. 6, Conduit-street, W. 7.30 p.m. President, Mr. M. A. GREEN, R.C.S.E. The 18th Century Architecture of Italy. Illustrated by lanterns. Session of Officers' Business, 8.0 p.m.

APRIL 20th. SPRING VISIT. The BUILDING TRADES EXHIBITION. Arrangements for the C. Members' Dinner at the Exhibition at 7.0 p.m. Application for tickets to be made to the Secretary, A. A. G. G. at Marlborough-street, W.

G. B. CARVILLE, Hon. Secy.

R. S. BALFOUR, J.

The Guildhall Art Gallery is being prepared for the reception of the Spanish pictures which will comprise the Art Loan Exhibition to be opened on Monday, the 22nd inst., by the Lord Mayor. The private view of the exhibition will take place on Saturday, the 20th inst.

Peterborough Town Council, having applied to the Local Government Board for sanction to borrow sums amounting to £12,200 for purposes of electric lighting, a Local Government Board inquiry was held into the application by Mr. M. K. North, A.M.I.C.E., one of their inspectors, last week.

The trustees of the National Portrait Gallery have accepted the portrait of the late Sir George Grey, and it has now been placed on exhibition in the Gallery in the corridor on the first floor. The portrait, which is by Professor H. von Herkomer, R.A., was publicly subscribed for.

The excavations at the celebrated Temple of Minerva, in the island of Egina, were begun last week under the direction of Professor Furtwängler, of the University of Munich. Two well-preserved heads, wearing helmets, have been discovered, as well as several fragments of statues.

The Bangor City Council have resolved to purchase the park adjoining the palace lately occupied by the bishop of the diocese, and to give a portion of the park as a site for the University College of North Wales, the lease of whose present buildings is approaching termination.

Trade News.

WAGES MOVEMENTS.

Associations that work should be resumed at a wage of 8d. per hour. This has since been agreed to, thus compromising the difference, the masters offering 7d. per hour. The dispute was, therefore, settled on the 11th inst.

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NORWICH.—The painters belonging to the Union, in accordance with a month's notice to their employers, are now out on strike for an increase of wages and alterations to the existing working laws. For several years wages in the painting trade have been 6d. an hour, which the men assert is the lowest amount paid in any town or city of any size in the kingdom. The men asked for a minimum wage of 7d. an hour, and for alterations to the rules. To this the masters replied that the time was inopportune. The men accordingly sent in a month's notice. The whole of the society men, to the number of 114, are now out on strike, and they have been joined by some non-society men.

CHIPS.

Research Committee, has been organised by the R.I.B.A. council and the council of the Surveyors' Institution, with the object of collecting and tabulating information from all parts of the country as to damage resulting to buildings from lightning-stroke.

A stained-glass window in Seamer Parish Church in memory of his father, the first earl. The window, the cost of which (£150) had been subscribed by the Seamer estate tenantry, is placed on the south side of the church.

The firm of Messrs. R. Parker and Co., timber merchants, Canada Dock, Liverpool, who resided at Crossington-park, Grassendale. The deceased, who was 63 years of age, died at Mentone on Thursday in last week.

Among the more recent settlements in connection with the H. & N. Street improvement are those for the H. & N. Street improvement. For the former a sum of £100,000 has been agreed to, and for the latter a sum of £231,000 has been adjusted by the payment of £157,000 plus £1,050 for surveyor's and other professional fees.

At Tuesday's meeting of the Carlisle Town Council, it was agreed that Mr. Brock, R.A., be asked to supply Carlisle with a bronze replica of his statue of Queen Victoria at Hove, Brighton, the cost to be £1,500.

On the recommendation of the President of the Royal Institute of British Architects, the Secretary of State for India has appointed Mr. John Begg, A.R.I.B.A., as consulting architect to the Government of Bombay. Mr. Begg, who was the winner of the Ashpitel prize, the Pugin studentship, and the essay medal offered by the R.I.B.A., and was for some time vice-president of the London Architectural Association, had to relinquish practice in Johannesburg on the outbreak of the present war.

An electric tramway system was inaugurated on Friday by the London United Tramways Company in the suburbs of Hammersmith, Chiswick, Acton, and Shepherd's Bush. The overhead system of traction has been adopted. It is proposed to extend the system to Uxbridge, via Ealing, Hanwell, and Southall. The construction of lines to Twickenham, Teddington, Hampton, Hampton Wick, and Richmond has already been authorised, and in the meantime the company are seeking power to try similar tramways in Surrey connecting Esher, Surbiton, Kingston, Barnes, and other places. When completed, the company's scheme will, if these powers are granted, cover 100 miles.

The rural district council of Winchester recently decided to employ Mr. H. G. H. Wood, of Malden, who, however, declined to take up the situation. They have now appointed to the office Mr. G. E. Carter, of Ulverston.

The Gulval School Board have adopted plans for additional schools at Gulval Cross, prepared by their architect, Mr. H. Maddern.

New schools for 320 girls have been built by the Corporation of Doncaster, in Carr House-road, at a cost of £3,850, exclusive of site, and were opened by the Mayor on Wednesday week. The builders were Messrs. Mullins and Richardson, of Doncaster.

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Steam-Tubes
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per ton. Per ton.
per ton. Per ton.
per ton. Per ton.
per ton. Per ton.
per ton. Per ton.
per ton. Per ton.

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Do., Vieille Montagne
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Lead Shot, in 28lb. bags
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Tin, Straits
Do., English Ingots
Spelter, Silesian

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Bangkok
Quebec Pine, yellow
Oak
Birch
Ehru
Ash
Dantse and Menel Oak
Fir
Wainscot, Riga p. log.
Lath, Dantse, p.f.
St. Petersburg
Greenheart
Box
Sesquiped, U.S.A.
Mahogany, Cuba, per super foot

1in. thick
Honduras
Mexican
African
Cedar, Cuba
Honduras
Strywood
Walnut, Italian
American logs
Dantse, per St. Petersburg Standard, 120 12ft. by 12in.

Quebec, Pine, 1st
2nd
3rd
Canada Spruce, 1st
2nd and 3rd
New Brunswick
Riga
St. Petersburg
Swedish
Finland
White Spruce
Baltic, all sorts
Pine, Boards, per square of 12in.
1st period
2nd ditto
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U.S. ditto
Mahogany, p.p.
Mahogany, black

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Do., brown
Cottonseed, refined
Olive, Spanish
Said, palm
Castor, and Codon
Do., Colaba
Palm, Java
Olive, Italy
Lard, U.S.
Pine, China, refined
Tallow, Stockholm
Do., Antwerp
Turpentine, American

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

VOL. LXXX.—No. 2415.

FRIDAY, APRIL 19, 1901.

COMPETITION WITH OTHER COUNTRIES.

OUR engineering enterprise and our art have been both seriously impugned of late. Attacks have been levelled against the British manufacturer, as well as against the British artist. We are told, and there is some truth in the assertion, that other countries are able to undersell our manufacturers and contractors; that even safety may be bought at too dear a price. What has been said about American engineering competition and progress may, to some extent, apply to our architecture. In the case of American engineering, the human factor in one sense has not been neglected. The big manufacturing firms know how much depends upon their assistants. They are rewarded according to their merit; but there is little encouragement given to English engineers by holding out adequate remuneration and prospects to talented young men who are entering the profession, and this argument has been used by the writer of the special articles on "American Engineering Progress" in the *Times*, from whose interesting remarks something may be learned. The reason why engineering enterprise and trade are best cared for in America is obvious, and when he shows us that we have a rival "threatening our industry to an extent that will be most serious to the whole trade of the country, unless a change is made in our business methods," it is time to be on our guard against encroachments from without. We may draw several lessons of value from the different conditions of training and work that obtain here and in America. The training and education of the young man destined for the profession of the engineer represents also to some extent the training of the young architect. In the first place, attainments and work are not reckoned here so highly as age. The practice in this country in regard to the young engineer is to apprentice him to a firm of engineers, for which a large sum is spent on what, at the best, is only office routine; or he may have passed creditably through a college course, and then only get a berth in a drawing office at a mere pittance, much below that of a competent mechanic. Many of the young engineers who enter offices in the large firms of, say, Great George-street, have received university education, or are graduates of technical colleges, and receive a very small salary, sometimes not more than 10s. to 20s. a week to begin with, and very discouraging to any young man of attainments, whose general equipment in knowledge may exceed that of the head of the firm himself and often that of his seniors in the office who receive larger salaries. His practical knowledge may, indeed, be very small; but what he does know is sound in principle, and not dependent on precedent. He works on a wider basis of principle than his seniors, and his working capacity quickly develops. The instance cited by the writer in the *Times* is only one instance of many that may be given. The young man was an accomplished graduate of a technical college, who entered a drawing office of a large firm of engineers at 10s. a week. The firm had to tender for work involving a new branch of engineering, and in preparing the plans and estimates, a special knowledge of mathematics was necessary. As the work was much beyond the empirical methods of the elder staff, the new draughtsman was put on the work. The contract was secured and

successfully carried out, resulting, no doubt, in a handsome profit for the firm; but the young draughtsman received as a reward a rise of only a few shillings a week. What would the cost to the firm have been had they been obliged to obtain expert professional aid to prepare their plans, specifications, and estimates? Certainly some hundreds of pounds. But, as we have said, age and experience are accounted everything in England. It is not so in the United States. There a man's ability and skill are first considered, and he is placed in a position to utilise that skill to the utmost, not only in the office, but in the workshop. The lesson is not without point in the young architect's career. After an expensive college training he goes straight into an architect's drawing office. It may be one in which he learns very little of his vocation as a whole, or it may be in the wrong direction. His talents in a particular line, artistic or mathematical, are not recognised or valued as they should be, nor are they put to the best use for the firm's business or to his own advantage. He is considered too young and inexperienced to do anything more than juniors are put to in the office. When his term expires, and he goes to another office as a draughtsman or improver, the same perverse system follows him. He is given an inadequate salary for making drawings of buildings for which he has not the least interest, and is paid according to his age, rather than his skill. No aid is given him to advance himself in design or practical knowledge of building. Shop practice is not put in his way unless, indeed, he enters a technical college or the studios of the Association. From the time he leaves school till he is advanced in age, he has no opportunity probably of turning his mind or his hand to that particular class of work for which he is best fitted. Nor is he encouraged in any bent or inclination he may show; rather he is told that he must begin at the beginning, as his master or his seniors have done. This is the typical English way of knocking brains into, or rather out of, a lad. We do not yet appreciate the value of "drawing out"—educing—talent from either our sons or pupils or our servants; but the idea seems to be ingrained to put the boy into the same calling as his father, whether he is suited to it or not; to put a man through as much drudgery as possible; to keep him at a drill that he does not care for. But this is not the way to encourage and bring out native talent, but rather to suppress and keep it dormant; and our American cousins are quite well aware of this, and do not rest satisfied till they know what a man is fit for, and then they put him into a position to do the best work, either in the office, the workshop, or the building.

As an economic problem the point under consideration is important. The ordinary architect's or engineer's education costs much to the country, but the country of his adoption does not reap the benefit of his talents, if he has any. Our Transatlantic friends know how to utilise his work by putting it out, and they know how to make the most of the men that seek their living in the States, or that we send out as adventurers. Then it is ironical, but also too true, that we educate our young engineer, and when he begins to be of value our neighbours get hold of him, or, as the writer in the *Times* puts it, we have paid America for corn to feed him and cotton to clothe him; his sugar and tea and beef come from other countries; not 50 per cent. of him is British, "half has been bought and paid for, and yet we send him away, duty free, to make lathes, or bicycles, or rails, to drive us out of our ancient markets." There is a great deal in this lack of seeing talent and profit, and yet neglecting it or driving it away to other countries. It is said "our young men are kept back until their best energies are run to

waste," that our system of labour is to keep it at an average of the lowest level.

Both professions have suffered from the want of a proper system of training and instruction. The idea is that after the young engineer or architect has finished his term of apprenticeship he ought to be fit for any kind of practice. The system of putting the right man to the right work is ignored; the consequence is that we expect our engineers to be equally competent to design a railway bridge, and prepare a scheme for sewerage or drainage utilisation—two opposite and irreconcilable branches; and our architects to design churches and monuments as well as labourers' cottages and factories. The professional man cannot specialise, or learn one or two things thoroughly, if he has to devote his attention to a dozen or more subjects of a very diverse kind. The thing is quite impossible. No architect has ever become an eminent church builder who has not devoted his time and attention wholly to ecclesiastical art, or has become an expert in hospital or asylum building unless he has given himself up to the work almost exclusively. This is one of the reasons why other countries, and manufacturers are able to undersell the British engineer in bridge construction and machinery. It is because our consulting engineers and Government inspectors require such a margin of strength, and will require such an absurd factor of safety that the American and foreign engineer can afford to compete at better terms. We are not discussing the question of stability and safety, nor do we assert that the American system of minimum stresses is good policy; but there is ground for saying the English constructor, whether engineer or architect, is inclined to add often needlessly to the quantity of material, and to the massive character of his work, not because of his desire to produce massive structures, so much as that he desires to be on the safe side. Because of his distrust in his own scientific experience and training, he is anxious to make himself secure, and the American competitor is, therefore, able to underbid him. Let us quote the writer of the American Engineering Competition: "The plan of employing experts for designing special plants and special factories is a great feature in the United States. The Americans appear to be specialising in quite a different direction to ourselves. We have our Great George-street magnates for designing bridges, roofs, &c., and the contractor, in theory, has simply to follow drawings and specifications. In America there are a certain number of designing engineers, but the work is far more in the hands of men who have had wide experience in the execution of the work. Therefore practice and theory go more often hand in hand." If the architect is in doubt about a steel structure, the steel maker employs an expert to show him how it should be, and therefore the steel designers of buildings in America are competent to take work that the English designer is not sure about, and not only to contract for it, but to do so at a lower price. It is through the want of expert knowledge that our large English contracts so often exceed a reasonable cost. A large percentage is added for risks and defective details. The quantities of material are taken much in excess of the amount really required, for what the engineer lacks in nicety of calculation, and certainty he piles it on in the shape of material.

We are told it is the human factor that commands the situation, and gives the American manufacturers their superiority; but this view has been challenged. No doubt if the human factor is interpreted as the business or commercial factor, we readily agree. The American business man studies each problem, and leaves no stone unturned to accomplish it; but by the human factor we mean something different—sympathy with human labour, regard for the hand-

TWENTY years ago we remember writing a recommendation of the reproduction then issued by Mr. B. T. Batford of a selection of plates from the "Works of Architecture" by the Brothers Adam. This folio of reprints has, we learn, long since been out of print, and events seemingly have justified the appreciation to which we gave expression when it first came out. Anyway, the same enterprising publisher has supplemented his previous volume by producing a second and enlarged work under the above title "The Decorative Work of Robert and James Adam" an imperial folio of 30 plates, half-bound, price 30s. net. The reproductions have been made in photo-lithography by Mr. James Akerman with the most sympathetic and satisfactory results. So considerably has the money value of the original copies of the "Works in Architecture" increased during the past few years, that the publisher of the present work states that he paid recently £66 for the copy from which the folio under notice was reprinted, although a similar

impression of the same work was sold some 20 years since for half that amount by him. It will thus be evident that from this standpoint alone the purchase of Mr. Batston's reproductions of selected plates affords a considerable advantage. Taste has no doubt developed in favour of the Adam style concurrently with the fashion of reviving the "Later Renaissance," and consequently there remains little doubt as to the success awaiting this capriciously produced volume. The style so admirably adapts itself to stone and plaster, to say nothing of other cast materials, that it offers many facilities for adaptation to everyday needs and modern uses. Provided correct copies are made, and the apartments in which such copies are employed are treated in accordance with the refined type of ornament thus introduced, the result will no doubt be satisfactory and in good taste. Good proportion and elegance of form must, however, in the main shapings of the rooms thus decorated, be insisted on; otherwise the ornamentation at once becomes out of place and emphasises the lack of skill and taste imposed by its surroundings. These conditions are among the elementary necessities for the successful use of any style, and particularly for a revived method of so limited and emphatic a kind as the refined style associated with the name of the Adelphi Brothers Adam, which, though reserved and unobtrusive, was emphatically a "grand style." There is little to add upon a topic so familiar; the very title of the book is its chief recommendation with people of taste, while as an historical record all would be glad to possess a copy. By the study of the old alone can any new development be inspired, and with this thought in mind we still are looking forward for a new departure. A new Adam in decorative art is in reality wanted to renew our Eden of commercialism and precedent.

THE QUEEN VICTORIA MEMORIAL.

THE general feeling of dissatisfaction at the narrow limitation of the competition for the Queen Victoria Memorial continues to be expressed, both privately and in the columns of the press; but, of course, all protest is now useless. From the brief report supplied us by the Secretary of Monday night's meeting of the R.I.B.A. (for our reporter was denied admission), it will be seen that Mr. William Woodward was not able to discuss the subject at that meeting on the technical ground that insufficient notice had been given; but he will call attention to the matter at an early business meeting of the Institute.

As a matter of fact, we understand that the credit for arranging for a competition on even a limited scale is due to Mr. W. Emerson, the President of the Institute. The National Memorial Committee originally proposed to entrust the commission to a well-known architect, as they had already appointed Mr. Brock as the sculptor of the statue, when Mr. Emerson urged that it would be more satisfactory to the subscribers and more fair to the profession if some five or six distinguished architects were invited to compete. The omission of the names of Mr. G. F. Bodley or Mr. John Belcher from the short list so selected is an unaccountable one, and other names of eminent architects will occur to every reader as worthy of inclusion in an invitation of this character; but, as we have said, all regrets are now too late.

Mr. Bodley's suggestion as to the form the memorial should take, as shadowed forth in his letter to the *Times* the other day, is interesting. He would place the monument rising out of the lake in St. James's Park—not, however, isolated, but connected with either bank by a bridge of a sufficient but not too great a width. This should have light and graceful arches. At either end of this bridge-road there could be a flight of steps and an archway with statuary and heraldic bearings and bronze gates. Statues might also be placed on the piers of the arches of the bridge. In the centre the memorial would rise four-square or octagonal, its base rising from the water. The lower part could be of red or grey granite, and the whole of the superstructure of white marble, with bronze statuary. The seating or standing figure of the late Queen should be under a canopy surmounted by a cross.

In style Mr. Bodley would like it to be of our own English Gothic; but there may be a prejudice against Gothic, and it could very well be designed in a refined "Renaissance" manner. The gates could be of bronze, and could be made very beautiful with subjects taken from the history

of our land and of the colonies. In such Mr. Bodley would not have it overpowering; he suggests that it should be more remarkable for refined beauty of detail and artistic sculpture than for any too considerable largeness of actual scale.

THE RATING OF PUBLIC HOUSES.

AT the ordinary General meeting of the Surveyors' Institution held on Monday last, a paper of great interest to rating surveyors was read by Mr. Walter C. Ryde (barrister-at-law), dealing with the above-named subject. The author started from what he thought might be taken as a principle governing the assessment of licensed premises, that they must be taken as licensed, and not valued in the same way as a shop or a dwelling-house. The problem to be considered was how to ascertain their ratable value. Net annual value was defined by statute as "the rent at which a hereditament might be reasonably expected to let," free from tenant's taxes, tithe, repairs, insurance, &c.; but this definition said nothing about special covenants so commonly found in the lease of a public house, by which the tenant was "tied" in respect of malt liquors or other articles necessary for his business. The ordinary yearly tenant must be assumed to be free from such a covenant, and every public-house, whether "tied" or not, must, for rating purposes, be assumed to be free. "Ratable value" was rent, subject to certain defined conditions—but what rent might be reasonably expected from a public-house? The rent must be fixed by practical considerations of existing circumstances, and the expectations of their continuance. A house with a good view, for instance, would command a high rent, although the tenancy gave the occupier no rights over the neighbouring lands. So a public-house well situated has a certain monopoly which must be considered in fixing the reasonable rent. The trade, or the profits of trade, as such, could not be rated, but the ratable value must depend solely on the rent to be reasonably expected. Trade was sometimes a personal thing, and it was argued that that part of the trade which was due to personal considerations should be excluded from notice; but the author was not inclined to think that, except in a very few cases, the personal part of the goodwill of a house amounted to very much. If there were ten possible tenants who expected to succeed, it was hardly likely that the rent would be reduced because one tenant would be likely to fail. Where a trade had been already established it might be said that a tenant not only paid for the value of the house, but also for the goodwill, and it seemed *prima facie* unfair to rate what was due, not to the character and position of the house, but to the personal influence of the previous tenant. But the question to be asked was not whether personal influence had brought the trade to the house, but the trade being there, whether personal influence could take it away. As to whether trade profits might be considered in valuing a house for rating, the author quoted the cases of "Dodds v. Shields" and "Cartwright v. Sealecoates Union," which, although they seemed to differ, appeared to establish the rule that while it was perfectly permissible for the rating surveyor to estimate, from his knowledge of the locality and from surrounding circumstances, what would be the reasonable rent to be expected from certain premises, he had no power to inquire for the purposes of arriving at such rent, into the profits of the actual business being, at the time of assessment, carried on. The author could not approve the cast-iron rigidity of the rule by which, under what was known as the "County Council Scale," one-half of a premium paid by an incoming tenant was deducted as representing the personal "goodwill," of the outgoing tenant, and the other half taken as representing an increased rental value.

A discussion followed, in which Mr. F. Marshall, K.C., Mr. W. Eve, Mr. J. R. Eve, Mr. P. E. Pilditch, and Mr. J. Field took part, and after a brief reply by the author the meeting adjourned.

Owing to the delay in the carriage of certain important pictures from abroad, the date of the opening of the Exhibition of Spanish Art at the City Guildhall, which had been fixed for Monday next, April 22, has been postponed to the following Monday, the 29th. The free admission of the public will commence at ten a.m. on Tuesday, the 30th inst.

THE BUILDING TRADES EXHIBITION.

THE International Building Trades Exhibition, opened at the Agricultural Hall on Wednesday last, promises to be one of the strongest and most representative that has been held. To the vigilance and administrative care of Mr. H. Greville Montgomery, the manager, we must attribute much of the success of the show, which will contain many new building materials and appliances. Great prominence is given to those inventions and applications of material which have lately come to the front, and one of the chief features of the exhibition is the representative collection of fire-prevention materials and structures shown in the inner hall under the auspices of the British Fire Prevention Committee, of which Mr. E. O. Sachs is the chairman, who have a stall for their fire-test reports at the entrance. During the period of the Exhibition several visits will take place from the Institute of Builders, the Architectural Association, the Society of Architects, Institute of Sanitary Engineers, Institute of Clayworkers, and the conference on standardising of brick arranged jointly by the Royal Institute of British Architects and the Institute of Civil Engineers and Institute of Clayworkers, will have a particular interest for the profession and the brick-maker. Mr. Thos. Blashill, F.R.I.B.A., is to preside. A large party of Germans engaged in the building industries are visiting the Exhibition; they were entertained by Mr. F. G. Montgomery at an inaugural lunch on Wednesday, and will also be entertained by the Institute of Clayworkers on Thursday next, the 25th inst. Architects and others interested in construction generally will find much to instruct and interest them in the hall, whilst enjoying the band of the Coldstream Guards, which has been specially engaged.

In the Minor Hall will be found exhibits showing the application of various inventions for rendering timber and wood unflammable; the use of "expanded metal" to various purposes—floors, partitions, and other structural uses; the best and most improved forms for the construction of safes and strong-rooms; fireproofing methods of protecting floors and stanchions; and several other manufactures having for their object the fire-resistance of materials used in building.

The Non-Flammable Wood Company, with which is amalgamated the Wood and Fabrics Co., Ltd., Townmead-road, Fulham, and 2, Army and Navy Mansions, Victoria-street (No. 33), have a most interesting stand, exhibiting specimens of their treatment for construction and joinery work. We here notice sash-frames, four-panel doors, and various kinds of joinery subjected to this treatment—a non-flammable solution injected into the substance of the wood by hydraulic pressure. To prove the non-flammable qualities, chips from pine and other wood so treated are subjected to a strong gas-jet, but without injury. There are samples of doors, balusters, handrails that have been treated by the solution, and which sustain the most perfect polish. We refer the reader to the report of fire-tests on the match-boarded partitions, one of ordinary deal painted with oil, the other of "non-flammable" deal, painted with "non-flammable" paint, by this company, published by the British Fire Prevention Committee. Of the first everything was consumed in forty-five minutes; the partition treated with the non-flammable paint resisted the process of destruction, and when the chamber was entered the furniture, curtain, and other combustible materials were unaffected. The report shows how the hut with the non-flammable wood partition was constructed with 2in. by 3in. studs and match-boarded, and the furniture all of yellow deal, and treated by the non-flammable process.

In Room A (1st) we see several important specimens sent by Banks's Fireproof Construction Syndicate, Ltd., City Bank Buildings, 71A, Queen Victoria-street, E.C. Amongst these is Banks's patent fireproof floor. The floor is of concrete, with steel joists 3ft. to 4ft. apart, and over these are steel hanging straps, which support ceiling-bars, carrying the metal lathing and plaster, thus giving a suspended ceiling with space between it and floor for ventilation. Other specimens exhibit suspended ceiling under wood joists and Banks's fireproof partition, constructed of x standards and helical lathing. This helical lathing being corrugated, and fixed to standards by wire, makes a very rigid partition of small thickness. Other applications of this invention are seen in a cornice bracketing surrounding steel girders, and pro-

and Co., Ltd., Arlington-street, Islington, have an exhibit of much interest to all architects, builders, and owners of valuable property. The specimens are mainly such of their manufactures as are embraced under the Fire Prevention Section. Messrs. Hobbs, Hart, and Co. are well known to all architects as the patentees and constructors of strong-room and party-wall doors, bullion-vault and muniment chests, and their keyed, bolted, party-wall doors and self-closing party-wall doors and fire-resisting shutters are important exhibits. We also notice their cone ventilators for strong rooms—a very useful appliance.

In the Fire Prevention Section, G. A. Williams and Son, of 21, Queen's-road, Bayswater, exhibit various specialities in the way of blinds for windows, outside and inside. The Williams fire-blind is a well-devised protection against the spread of fire in narrow streets. It is well known that fire spreads rapidly through the windows of houses which become broken by the heat and flames; but by using Williams's fire-prevention blinds, which are available without opening the windows, and can be brought into use in two or three seconds, having an automatic base attachment, so that the flames cannot be drawn behind the blind—this is impossible. This fire-blind has been tested severely on several occasions—in one instance a fire from a lamp being able to penetrate through the window. The British Fire Protection Committee also report a test where the window was screened from the flames by a rolling fire-blind, the fire reaching 1,600° Fahr., and endured half an hour's test. Skylights and doorways can also be protected. Specimens of the ordinary rolling blinds treated for the prevention of fire; also an outside blind or sun-shade arranged that when not in use it is out of sight, and does not require a casing, may be seen.

The British Uralite Company of Higham, near Rochester, have a large wooden hut in centre of large hall lined with uralite slabs 14in. square inside and out, and roofed with red uralite tiles, all set diamondwise. We have so recently alluded to the merits and qualities of uralite as a material both as a non-conductor of heat and cold, as fire-resisting, and of extreme value as a substitute for matchboarding, ceilings, roofing, and for casing girders and iron columns, and as applicable to various other decorative purposes in railway carriages, interiors, balcony fronts, and lath partitions for the time, that we must refer our readers to the *Building News* of March 29, 1901, for a full description of this material. The wooden hut shows a few of the more obvious applications of this useful material, and is well worth the attention of all architects and others to the exhibition, especially the doors and other woodwork veneered with uralite.

In the Fire Prevention Section may be seen numerous specimens of all sizes and weights of the New Expanded Metal Company's productions, whose offices are at Upper Thames-street, London, E.C. The expanded metal is now so favourably known by all architects that it is needless to refer here to the many important applications of it to building that are made. We see here steel channel arches for expanded-metal ceilings, floors, clips, and hangers for carrying suspended ceilings, expanded metal, in various sizes, showing how it can be applied to different uses. Besides bullion screens, fences, tree-guards, gates, and other uses to which the expanded metal can be put. Of particular interest to the architect are the specimens of flooring in the hall occupied by the British Fire Prevention Committee. Here we see a floor of rolled steel joists treated with the expanded metal, arched steel channels for arched ceilings partially concreted, so as to show the method of centring; also the fireproofing of girders and columns, coves, &c., with the metal. Here the architect and builder will find all they need to know of the development of this mode

of construction, and how it can be applied to various uses. A specimen of a floor, with an expanded metal core in the centre, is a valuable application, and can be constructed by temporarily to maintain the expanded metal in

position until the concrete is set. We refer our readers to the Company's special sheet, and to the specimens exhibited in this department. Here will be seen the very ingenious patented "extension studs," that can be lengthened and adjusted to the levels of floor and ceiling, so that the metal can be cut to the proper length and be secured in the proper position till the plaster is applied; also a flat and arched floor showing the application of the "expanded" metal, a section of cross walls, showing the expanded metal used at the intersection of four cross-walls for a granary, imbedded in cement concrete, each wall being finished 6in. thick.

At Stand No. 28, Fire Prevention Section, the Crittall Manufacturing Co., Manor Works, Braintree, Essex, show a variety of their excellent casements, including their well-known "Safety" reversible casement, which facilitates cleaning and prevents accidents. Various sashes made by the company for warehouses, stables, and for other ornamental uses, are worth notice. The example shown of ornamental circular-headed and channel-framed sashes, 13ft. by 10ft., made for the Marshall-street Electric Light Station, is a special feature; it contains seven centre-swinging vents, operated by one set of screw gearing. Another exhibit of interest to the profession is a special side-hung fireproof door, precisely similar to one tested by the British Fire Prevention Committee (see their report). The sliding wrought-iron door, hung on improved frictionless rollers, and closing into a small channel frame which seals the opening, deserves notice. In addition to these we find samples of the company's fittings, sections, and methods of jointing, and numerous photographs of their specialities. The scrolled work of wrought iron and leaf-work under the stall is also a noticeable example of execution.

Messrs. Potter and Co., Ltd., 109, Victoria-street, are exhibitors in the Fire-Prevention Section of concrete floors and slabs, showing ornamental ceilings; and also their concrete lintels, with tension-rods imbedded—a form of lintel of much strength and value.

The Fireproof Plate Wall Co., Ltd. (No. 17), show slabs used for partitions.

The Columbian Fireproofing Co., Ltd. (No. 3), has a large stand, showing a 15ft. span section of panelled construction on their system (previously described in our pages), several sections of columns, stanchions, &c., incased with concrete, showing the mode of casing adopted, with specimens of bars and stirrups. They also exhibit a section of floor incased for the test of the British Fire Prevention Committee.

In Row F, stand 115, may be seen a new labour-saving winch of considerable value to builders and contractors, patented by Mr. Joseph Fishburn of High Wycombe, clerk of works to Hughenden Manor, where extensive additions are being made. This winch has been in operation at the works, and we have the evidence of practical men of its great value in lifting and lowering materials and goods with the greatest ease and safety. By its use ordinary wheelbarrows, hand-barrows, baskets, buckets, &c., loaded, can be lifted, and the empty ones lowered at a great saving of labour. Thus barrow-loads of bricks and mortar, or other material, can be hoisted or lowered with safety and expedition, the loads ascending while the empty receptacles descend to be refilled, the winch being managed by two labourers. The winch is on view lifting and lowering to and from a height of 30ft. goods in bulk, building materials, for excavators, bricklayers, masons, tilers, painters, &c. Fishburn's labour-saving winches will become a boon, as the hod and hod-carriers are not required, and the ladders are reserved only for workmen. In this way a party of bricklayers at work on a scaffold are fully supplied with their materials, and the economy of time and labour insured is considerable.

Mr. Mark Gentry, of Sible Hedingham, Essex, has a most interesting exhibition of high-class red bricks and ornamental bricks in Row E 107. We have here a unique collection of red bricks of a quality and description that will satisfy the most exacting architect. The ornamental bricks have all the appearance of "carved bricks," so much so that they can be used in any position. Mr. Gentry has reached perfection in the attainment of uniform colour, by which means he can insure in a large relief design, as that of a cornucopia, made in brickwork, which is a perfect uniformity of colour throughout, which is almost impossible. The

patterns cast and moulded are in high relief, and sharp in the "undercut" portions. Amongst other exhibits we must notice the excellent bricks of deep red colour, dark orange hand-made facings, hand-pressed facings, red rubbers made in various shapes, moulded bricks, chimney-pots, bricks suitable for cornices and moulded work, all sand-faced, and some capital arch bricks, made of large size for gauged work.

The large stand, Row C 67, occupied by the British Luxfer Prism Syndicate, Ltd., of 16, Hill-street, Finsbury, is of particular interest to all architects and builders, as exhibiting the many important specialities they have produced for the introduction of natural light into dark interiors and basements, well known to most of our readers. We see in this instructive stand, specimens of the Syndicate's window prisms to take the place of ordinary glass. The "Luxfer," or light-carrying prism, is made in some 200 varieties. Each prism is of white crystal glass 4in. square, one side plain, the other corrugated like the teeth of a saw, and these irregularities refract or bend the rays of light which pass through the glass. We refer the reader to our previous description of the prism. These are united in sheets by the process of electro-glazing, and many specimens are exhibited showing the wonderful solidity and strength of the sheets, which exceed the strength of plate glass. Their fire-resisting qualities, to which we have before alluded, are proved by the specimens of prism plates, showing their condition before and after testing, and prove their superiority to all ordinary systems of ordinary glazing. Several of the prism plates have ornamental borders. The numerous applications to lighting of buildings are shown by the syndicate, who can deflect the light to any part of a room, the floor, or walls. For ornamental purposes, art glass panels, screens, and many other uses, the Luxfer prism is admirably adapted, and in the "Luxfer" rolled prismatic glass the principle is applied in a cheap form for factory windows, basements, and other purposes. The application of the electro-copper glazing process may be said to revolutionise the lead-glazing system; several ornamental specimens are exhibited of this speciality, showing its greater strength and neatness. The pavement lights are also worth inspection.

The British Compo-board Co., 18, Roscoe-street, Golden-lane, E.C., and Sweden, have in Bay 10 a display of their valuable invention, one of considerable use to the builder and architect as a substitute for lath-and-plaster for roofs, ceilings, partitions, and other purposes. It is an improved wood or a composite structure, its basis consisting of a varied course of slats of well-seasoned and carefully-selected wood, each 1in. wide and 3in. thick, cut perfectly plane, true, and cemented together, edge to edge, with a fire-proof substance which forms also the adhesive for the densely-compressed pulp boards which cover the wood slats on each side. By great pressure the materials are compacted together. It can be sawn, nailed, screwed, and glued like wood, and presents perfectly true and smooth surfaces, non-absorbent, fire-resisting, and non-conductive of sound and heat. For these purposes compo-board has been largely adopted by the National Telephone Company in their telephone cabinets, and by the London School Board and other educational authorities for lath and plaster. For ceilings it is especially valuable, as it will not crack or fall like plaster, also for schools, board-rooms, warehouses, &c., and it can be papered, distempered, and can be finished with decoration. It is made in any length up to 18ft., and is 4ft. wide, and, if filleted over the joints every 4ft., makes a capital ceiling. It can also be cut and used for panels in dados and for ornamental ceiling. For walls it is an excellent substitute, and quite as cheap as lath-and-plaster, and for partitions between rooms can be made thin and non-conductive of sound, &c. Compo-board is also admirably adapted for the interior lining of iron and wood buildings instead of matchboarding, which is not satisfactory for many obvious reasons. It has all the appearance of a plastered surface, and for the angles of internal dormers, or for any shaped parts, it has great advantages. It admits of much variety of decorative treatment by planting mouldings. The erections in the main hall show how compo-board can be used and decorated, and the extreme neatness and smoothness of the surfaces of partitions and walls.

John Knowles and Co., 38, King's-road, St Pancras, N.W., and Burton-on-Trent, exhibi

Row C) a variety of improved sanitary fittings, including their well-known patent "Anti-Vap" street gully, for extreme drought or rain-storms—a desideratum—made in three sizes, 15in. to 18in. diameter and 3ft. to 4ft. deep, which gives a deep well for all sediment, requiring not so frequent a cleaning out; the outlet is high, so that during heavy rain it is not likely to get stopped up, the water-surface is small, so there is less evaporation and danger of unsealing, and it can be easily cleaned, and there is an inspection-arm all advantages over the common types of gully. The "Aquarius" washdown closet, with outlet that can be turned in any direction, is a capital apparatus as shown. The joint of closet to trap is made in the simplest way, by pouring in liquid cement into the annular groove, which makes a very tight joint, and the joint is below the trap level, and is therefore sound. We see also the "Wyrurst" patent channel junctions, inlets, &c., for inspection-chambers, admirably clean and well made, and various intercepting drain-traps. The "Vitrifine" stoneware sinks and other goods are well worth notice. Specimens of Callender's Pure Bitumen Dampcourse, so highly appreciated for its resistance to moisture, pressure, and temperature, are also shown.

The Ratner Safe Co., Ltd., Ratner Safe Works, 51, Moorgate-street, in Bay 2, exhibit various samples of fire-resisting and burglar-proof safes. A special feature at this stand is a safe recently opened by burglars at a post-office by the aid of oxyhydrogen gas. The company has replaced it by one of the "Twelve-corner-bent" safes, which is invulnerable to such attacks. These steel safes are unquestionably a vast improvement. The Ratner "Twelve-corner-bent" solid steel safes are jointless at the twelve corners, and the improvement is effected by bending and flanging the bodies of the safe. The top, bottom, and sides are formed of a plate of steel bent at the corners, and the back and front edges are bent or flanged inwards, and the bolts at front and back shoot behind these flanges. The great merit of this safe is that it does not depend upon screws and rivets, but simply upon the bent plate. The Admiralty and War Office have recently ordered several hundreds of safes of this firm.

F. McNeill and Co., Lamb's Buildings, Bunhill-row, have on view, Row D (92), specimens of their well-known asphalted roofing-felt for exterior roofing, inodorous and sarking felt for lining roofs under slates, tiles, and metals, and for lining corrugated-iron buildings—a very necessary precaution. For deadening floors and partitions the dry-hair felts are good non-conducting substances; and for protecting water-pipes from frost, as well as a material for covering steam-pipes and boilers, these dry-hair felts are invaluable. Then we see the excellent and cheap form of damp-proof course in the shape of fibrous asphalt, and the patent metal asphalt—a perfect damp-proof course. McNeill and Co.'s slag-wool or silicate-cotton fireproofing preparations are well known; and we see the slag-wool made up in slabs and in combination with fibrous plaster for various purposes in building, pipe covering, covering girders, deadening sound, &c. The sectional models showing the manner the floors, ceilings, partitions, and walls are lined with these materials are very illustrative and instructive.

Aspinall's Enamel, Ltd., New Cross, London, S.E., have a unique little villa Row D erected, showing the application of their sanitary washable "Wapicti" for interior decoration, and for churches, schools, asylums, halls, and other buildings. It entirely supersedes flatted oil paint. Here we see the interior of two rooms, with walls, dadoes, and friezes decorated with enamel in various colours and shades. We recommend all architects, builders, and decorators to visit this stall, which is situated near the upper end of the hall.

J. Austin and Sons, Ltd., Row A (16) exhibit a case of their superior patent flax sash-lines, of which they make 10 qualities. This old and well-established firm do a large and increasing trade in sash-lines and cords for window-blinds, venetians, windows, for pictures, and other uses. They also make halyard and log lines in large quantities. The stand is well worth the inspection of all architects and builders. Their Imperial patent blind-lines are very superior to anything we have seen. Their trade mark is an "Anchor."

The National Opalite Glazed Brick and Tile Syndicate, Ltd., London Concessionaire W. Griffiths, of 39, Hamilton House, Bishopsgate-street, Without exhibits an ornamental structure, in which opalite glazing is applied

in various designs and colours, both externally and internally. The ceiling, an ornamental arrangement of the opalite, is very effective, and the land polished and of elegant appearance of the material has a decorative value that must be seen to be admired.

Walter J. Pinner, Ltd., Manchester Row A have a very notable collection of timber in the form of a pyramidal tower, in which are displayed some very beautiful examples of stained-glass windows and leaded mosaic glass of various designs. A frieze panel on one side is a very telling landscape effect, broadly treated in Vitreum mosaic glass, leaded, representing a river, wooded banks, trees, without paint. The circular ceiling panel of star-like design is also effective, and the side leaded lights and panels are very nice in colour and execution.

Walter E. Mason, Horwich, Lancashire, has a large stand (Row D) in hall filled with sanitary ware of superior fireclay. We especially draw the attention of architects and others to the very excellent corbel lavatories, these being supported on fireclay corbels fixed into the wall. The "Ruby" pair of lavatories, two together, are elegantly shaped to save room. One lavatory has the basin resting on legs, nickel-plated, and has an imitation marble back with mirror. Then there is a range of two vegetable sinks and lavatory combined made of glazed fireclay, but no lead glazes are used. We also notice a very convenient pedestal basin, oval in shape, all of the same ware; a hexagonal urinal, the "Diamond," with a centre vase of imitation marble fed by automatic arrangement as a fountain, a very economical and handsome arrangement; a siphonic closet with 5½in. water seal that cannot be siphoned out, and a large water area; also a useful hospital sink for cleansing bed-pans; several baths and closets of the same white glazed fireclay of a superior quality. This stand will repay the attention of all architects and sanitary experts.

B. Ward and Co., Ltd., Parliament-street, S.W., Row E (113), concrete and mosaic specialists, have a large stand, in which they display many kinds of concrete and mosaic manufactures. As proprietors of Charteris and Longley's wood-block flooring, they exhibit some very effective examples of an ornamental kind, in which jarrah, maple, and other hard and coloured woods are introduced. Also Ward's patent stone leaded steps with mosaic finish, and several other samples of granite concrete, artificial stone, &c.

Joseph Cliff and Sons, of Baltic Wharf, Waterloo Bridge, have a large and very comprehensive show of their white moulded and brown salt-glazed goods, sinks, lavatories, Imperial porcelain baths, and sanitary ware. A terracotta archway forms an ornamental feature to their stand near the entrance to the hall, which is a good specimen of Cliff's tawny terracotta and its use in construction to arches. The glazed bricks, white and brown salt-glazed goods, fireclay lavatories and closets, are worth examination. We notice an example of Tiltman's patent partition brick, which makes a very thin but excellent partition between dressing-boxes, slipper-baths, lavatories, &c., and Shoppee's patent dovetailed bricks for vaulting and facing concrete walls, &c.—both important building specialties.

Mark Fawcett and Co., of 50, Queen Anne's-gate, S.W., have at the side of hall a full-size model of their fireproof and ventilating flooring system, showing the rolled flanged joists, about 2ft. apart, and their patented tubular lintels placed in position on the lower flanges. This full-size example will be instructive, and exhibits the advantages of the semitubular tiles both as a centre for the concrete and as a mode of protecting the lower flanges of the rolled joists. The collection also includes the patent "Fawcett" woodblock floor, the constructive features of which are the steel tongues, which run through and connect the corners of the blocks, giving them great rigidity and strength. Several specimens are on view, as well as photographs of buildings in this country and America where the company's specialties have been successfully introduced. We have lately referred to the merits and advantages of the "Fawcett" floor, which has been largely used in many Government buildings, and in cases where the best material and workmanship are required, cannot be beaten.

Conley and Co., Ltd., Queen Victoria-street, in Row E, have a miscellaneous stand of their granite vitrified paving bricks, buff terracotta facing bricks, enamelled and coloured bricks, and sanitary

stoneware, worth inspection by all architects and builders.

S. and E. Collier, Reading, in Row E, have an interesting exhibit of red roofing and wall tiles of superior quality, hand-made and sand-faced, a variety of red terracotta work, including an entrance doorway, ridge-tiles, finials, &c., which cannot fail to be noticed, near the entrance end of hall.

The St. Pancras Ironwork Co., St. Pancras-road, has a large stand with a miscellaneous collection of their manufactures, including spiral staircases, pavement lights, patent stable and other fittings and specialties in paving, draining, and ventilators, that are well known to the profession. Those who visit the show will, of course, not fail to notice this stand.

We have so lately described the new metallic decorations introduced by B. Dellagana and Co., Ltd., of 11, Shoe-lane, that it is not required of us now to particularise; but we hope all architects and decorative artists will visit the stand of this company, Row C (74) and see for themselves the beautiful reproductions in copper and other metals of the most delicate ornamentation of repoussé, high relief panels, and other modelled art works that can be reproduced by this method of electrode position.

The Veronese Perfected "Gypsite" (No. 63), Row C, exhibited by Veronese, Ltd., New King's-road, Fulham, and Norfolk-street, Strand, is exhibited in a highly ornamented structure. This fibrous material is very effective in the sharpness of embossed ornament, and the ceiling and walls show very richly embossed designs. The material is light and easily fixed, and can be used for high-relief cornices, friezes, ceilings, &c.

Messrs. Ewart and Son, 346, Euston-road, have a large stand in Row C, in which they exhibit their "Lightning" Geysers for gas, oil, or fuel. For obtaining a hot bath almost immediately these geysers have a wide reputation, and we here may see the "Surprise," the "Acme," the "Lightning," and other special makes; and select the one most suited to our purpose.

George Jennings show several of their excellent closets and lavatories, a model bathroom de Luxe, replete with fittings and water closets.

The valuable and decorative paint known as "Ripolin" is exhibited in a handsomely fitted up stand—Bay 3—in the Great Hall, where we see the beautiful and pure white in the pilasters and door-framing with red panels. The architect will do well to pay a visit to Ripolin and note its variety of shades, a paint which is ready for use and requires no varnish. Full particulars can be obtained at 110, Fenchurch-street.

Palmer's patent wire-supported Travelling Cradle, 250, Westminster Bridge-road, is exhibited in Bay 2, and can be seen in working order. It is a simple and safe means of reaching all work where staging and ladders are necessary, and the cradle can be fixed anywhere. We have already described its value as a safety means of painting and pointing buildings. The London County Council invariably use it on their public works.

OBITUARY.

MR. HENRY WILLIAM BULL, the principal member of the well-known firm of builders and contractors, who built the Strand Royal Court of Justice, died at Southampton on Monday last. He was the eldest of the three sons of the late Mr. Joseph Bull, of Southampton, contractor, who died in 1867, shortly after taking his sons into partnership. Mr. H. W. Bull, whose decease we have to record, commenced life by serving his articles to an architect, and afterwards joined his father and brothers. Among the buildings carried out by his firm may be mentioned the Portsmouth Railway Station, the West London District Schools, and many post-offices, barracks, gas-works, churches, and chapels in all parts of the country. We gave Mr. Bull's portrait, together with that of his brother, Mr. Edward C. Bull, in our issue of June 13, 1890.

The Skipton Rural District Council on Saturday decided to adopt the recommendation of the sanitary committee that the sewerage schemes for Culeton, Conelby, Cowling, Grassington, Farnhill, and Salterforth should be pushed forward.

At the meeting of the Aberdeen Ecclesiological Society on Friday, Dr. Cooper read notes on Kinloss Abbey, the work of preserving which, he mentioned, was now being carried out by the Rev. J. J. Dunbar, of Seapark, Forbes, the proprietor.

Building Intelligence.

CANTERBURY.—The Archbishop of Canterbury has ordered the rebuilding of the north-west tower of the cathedral, which has been rebuilt at a cost of £25,000. No authentic records exist in relation to the exact circumstances in which the old tower fell; but the disaster is supposed to have happened about the year 1666. The cause was probably being the heavy rain and the timber roof. When it was started a few years since for the general restoration of the cathedral the executive committee found that, owing to the decay of the west bay of the nave vault, the rebuilding of the north-west tower was the work which most demanded attention. The late Mr. J. L. Pearson, R.A., proposed a design for the rebuilding of the tower, which, subject to certain modifications, was ultimately adopted. The south side of the tower, forming part of the nave of the cathedral, was not affected, although the walls of the triforium and clerestory stages were walled up. All that remained was to carry the same design round the three remaining sides; but there was a good deal of controversy as to the character of the exterior of the building before a satisfactory agreement was arrived at. Messrs. Luscombe and Son, of Exeter, were given the contract for the work, which was carried out in sections, the money for each section being first obtained in subscriptions before the next stage was proceeded with. Mr. Frank Pearson succeeded to the duties of architect on the death of his father. The new tower, which resembles in its general character the south-west tower, is about 34ft. square over all, and from floor to ceiling, a height of nearly 100ft., is open to the cathedral. The work has occupied about 2½ years. On leaving the cathedral the archbishop proceeded to the Bishop Otter Memorial College, an institution for the training of young women, daughters of poor clergy, professional men, and others in the work necessary to equip them for elementary schoolmistresses. There Dr. Temple dedicated a new wing, recently completed at a cost of nearly £4,000. The college has made great progress in recent years, and now affords accommodation for 80 students.

LIVERPOOL.—The Local Government Board have forwarded their sanction to the borrowing by the City Council of £5,500, to be expended under Part III. of the Housing of the Working Classes Act, 1890, and at Wednesday's meeting the city council decided on the recommendation of the Housing Committee that the sum be placed at their disposal for the purchase of additional land and the erection of labourers' dwellings in Arley-street, Kew-street, Newsham-street, Clive-street, and Shelley-street. It was also agreed that the Local Government Board be asked for sanction to the borrowing of a further £42,500 for the purpose of carrying out a housing scheme, under the provisions of the Public Health Acts and the Housing of the Working Classes Act, 1890, upon land in Bispham-street, Henry Edward-street, Adlington-street, and Lace-street.

NORWICH.—The foundation-stone of the Jonathan Scott Primitive Methodist Memorial Chapel was laid in Thorpe-road last week. The entire scheme includes the erection of a chapel to seat 600, with vestries, an institute at the rear accommodating 100 persons, and a Sunday-school to the extent of 100 children. The site cost £1,000, and to complete the scheme will involve the expenditure of another £7,000 or £8,000. At present, however, it is intended to build the chapel and the institute only, and the contract for this has been let at about £4,000. The chapel is Gothic in design, with a spire, an open porch, and granite columns in front. The exterior will be faced with red brickwork, relieved by stone and white Cossey ware. The interior will be of pitch-pine. There will be galleries all round, approached by four staircases, and the seats in the body of the building will radiate. An organ loft will be built in the apse, and singing galleries will be attached. Mr. A. F. Scott, son of the late Mr. Jonathan Scott, is the architect, and the work is being carried out by Messrs. Scarles Bros., of Norwich.

PAIGINTON.—New cottages have just been completed for Mr. Washington Singer at Steartfield House, near Paiginton. Messrs. Bridgman and Bridgman, architects, of Paiginton. They are built in cream-colored Kingsteignton brick, roofed in with Bangor slating, created off with

live stone, and ridging. The entrance is placed in the central yard, with circular flanking walls, coped with Portland stone, to which are hung a massive pair of oak gates. On the south side within the gates are placed the loose boxes, five in number. These boxes are lined around their lower portions with a dado of 2in. elm plank and Oregon cappings. The stable consists of six stalls, fitted with Musgrave's fittings, and pitch-pine board between the divisions. The stable is lined above the horses' heads with green fresco tile of a non-reflective kind, and brown glazed tile capping, and it is ventilated with two large Boyle air-pump ventilators. Above the stable—which has a double ceiling of slag-wool—are the lads' rooms. In the centre of the block are placed the harness, cleaning, and mess rooms, the whole lighted by electric light. On the opposite side of the yard are placed the coach-house and gig stalls, 100ft. long, all fitted with revolving shutters. The head groom's quarters are placed over the centre workrooms, with a separate entrance to the drive on north side. A clock turret dominates the group of buildings. The covered part of the yard is paved with granolithic paving, and the open space with asphalted macadam. Messrs. Smith and Son, Bury St. Edmunds, did the iron roofing and hot-water work, the estate workmen carried out the electric light work, and Messrs. Dart and Pollard, of Midvale works, were the building contractors.

ST. ALBANS.—A new board school has just been built in the Old London-road to serve the growing Priory Park district. It provides at present accommodation for 200 boys, but will hereafter be extended. There is a schoolroom for 100, hereafter to be divided by a sliding partition, into two classrooms, each for 50; and two other classrooms, each seating 50 boys. The precaution has been taken to build the lobbies, cloakrooms, &c., of the size that will be required for 300 scholars. The walls are of local red bricks, and the roofs are covered with Woburn red tiles. The floors in the passages are of Stuart's granolithic, and the rest of the floors are of pitch-pine blocks, of Duffy's Acme, D quality, laid herringbone fashion in composition on a concrete bed. The heating is by Shorland's stoves. Fresh air is brought into the backs of the hearths in stone-ware pipes, and the warm air is passed into the rooms about 8ft. from the floor level. The architects are Messrs. Clarkson Bros., of St. Albans and London, and the builders Messrs. Whiteley and Jervis, of Alma-road, St. Albans, Mr. H. Tanner having been the clerk of works. The formal opening of the schools, which cost £2,800, took place on Monday.

SIDCUP.—The Greenwich Guardians have purchased a site at Sidcup, and the foundation-stone of the new homes was laid by the chairman of the board last Wednesday week. The site embraces 60 acres of park land, and accommodation is to be provided for 524 children, 224 boys in homes for 50 each, with one pair of cottages, and 300 girls and infants in semi-detached cottages, to accommodate 15 each, with pairs of probationary cottages at the boys' and girls' entrances. Placed on a central line dividing the boys' side from the girls are an isolation infirmary for 28 beds, with nurses' quarters, laundry block, with baking and engine house, swimming-bath (68ft. by 25ft.), and gymnasium. A large house existing on the site is to be adapted as the administrative block. The buildings will be faced with Tunbridge Wells red bricks and covered with tiles. The architect is Mr. Thomas Dinwiddy, F.R.I.B.A., F.S.I. The tender accepted, as previously reported in our pages, is that of Mr. Thos. Rowbotham, of Birmingham, at £107,777, the architect's estimate being £108,500.

SWINDON.—A new Primitive Methodist Church has been recently opened in Rodbourne-road, providing accommodation for 400 persons, and new classrooms erected, the old chapel being utilised for schoolroom. The building, which is Gothic in style, has been built with red pressed bricks for face and Bath stone dressings, and covered with blue slates. There is a large oriel window in front gable. The interior is seated in pitch-pine, and the rostrum and roof principals are also of this material. The windows are filled with stained glass. Mr. R. J. Leighfield, of Swindon, was the builder, the contract being £1,151, and the architects were Messrs. William Drew, M.S.A., and Sons, of Swindon.

WOOLWICH, BRICKS.—During the last two years the interior of the parish church has been beautified by several valuable gifts. In 1899

Miss E. M. Du Pre placed in the church a chancel screen of carved and painted wood, from the design of Mr. J. N. Comper. In 1900 Mrs. Bagnell erected a foliated cross and two figures of seraphim upon the screen, also the design of Mr. Comper, and in addition provided a side-screen for separating the nave of the church from the old side chapel, now used as a vestry. In the same year the parishioners subscribed about £350 in order to replace the former choir seats with oak ones. The whole church was distempered, a new heating apparatus provided, and the roof and walls repaired. This year Mrs. Gilbey and her daughters presented a reredos (completed with side panelling) to the church. The reredos was designed by Mr. W. D. Caröe, and is of carved wood, gilded, and representing the entombment of our Lord, together with figures of the Evangelists and SS. Peter and Paul. The Annunciation is also shown in the work. This gift finishes the internal restoration. The screens are the work of Messrs. McCullough (Kennington) and Mr. Bernard Smith, who was responsible for the painting. Messrs. Hitch, of Vauxhall, made and decorated the reredos, and Mr. Herbert Read, of Exeter, designed and made the clergy and choir seats.

PROFESSIONAL AND TRADE SOCIETIES.

BRISTOL SOCIETY OF ARCHITECTS.—The annual general meeting of this society was held at the Fine Arts Academy, Queen's-road, Clifton, on Monday last, Mr. G. H. Oatley, vice-president, in the chair. The scrutineers for the conduct of the election reported to the meeting that Mr. Frank Wills had been elected president, Messrs. W. L. Bernard and G. H. Oatley, vice-presidents, and the hon. sec., Mr. H. Dare Bryan, was unanimously re-elected. The following gentlemen were the members of the new council:—Messrs. La Trobe, Nicholson, Silcock (Bath), Skinner, Joseph Wood, and J. Foster Wood; and Messrs. Green (Bath) and J. Cyril Thompson associate members of council. The annual report and balance-sheet presented by the council were, upon the motion of the chairman, seconded by Mr. J. Cyril Thompson, taken as read, and adopted.

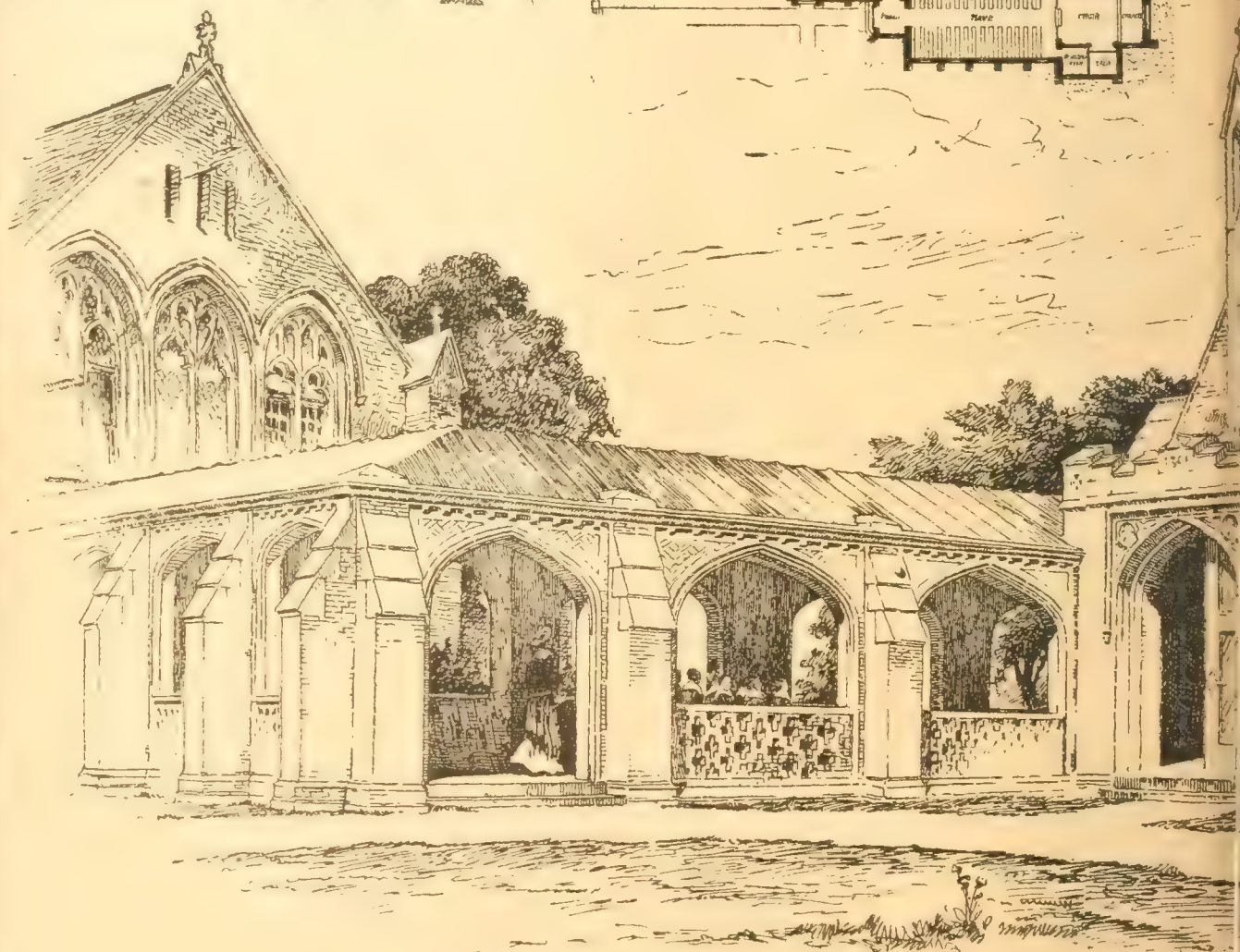
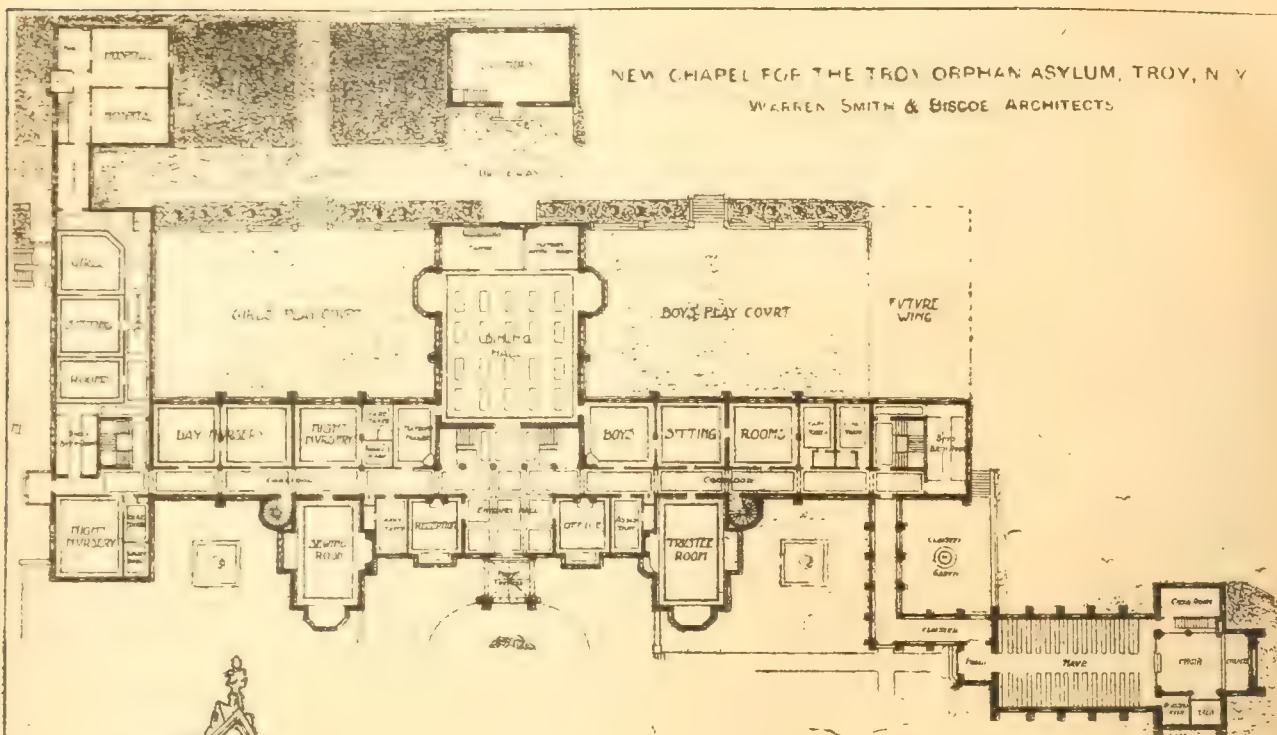
EDINBURGH ARCHITECTURAL SOCIETY.—A meeting of the Edinburgh Architectural Society was held on Wednesday week in Dowell's Rooms, Mr. A. E. Balfour Paul, president, in the chair, when Mr. James A. Arnot gave a lecture entitled, "Notes on an Architectural Tour in Belgium." A historical sketch referring to the rise of Flanders, commercially and politically, and to the effect of Spanish rule on the country, was given, and this was followed by a description of the ecclesiastical and secular buildings, and domestic work. Reference was also made to the present-day architecture in Antwerp, Bruges, Ghent, Brussels, and Malines. A number of limelight illustrations were shown.

GLASGOW ARCHITECTURAL CRAFTSMEN'S SOCIETY.—The last meeting of the session was held on Friday, the 12th inst., Mr. Alex. Dance, I.M., in the chair, when Mr. J. Kendrick Edwards, Belfast, read a paper entitled, "Warm-Air Heating Apparatus, and the Building Preparations Necessitated." The lecturer, by means of various drawings, illustrated schemes of mechanical ventilation for varied purposes and conditions, including a system for the successful ventilating of tenements of flats on that principle. Discussion followed, and on the motion of the chairman, a hearty vote of thanks was accorded the lecturer.

The question of laying out the insanitary area of Longlands, Bradford, concerning which the Local Government Board has brought pressure to bear on the Bradford Corporation, is receiving attention, and the city architect has drafted a plan.

The foundation-stones of a Wesleyan church were laid in Fore-street, Tonnes, on Monday week. The church, which will cost about £3,000, will be Late Decorated in style, and will be constructed of Stoneycumb limestone, with façade dressings of Chudleigh limestone, and window dressings of Bath stone. The north-east angle of gable will have a tower running up to a short turret. The church internally will be 68ft. by 36ft., and will be covered by a single-span roof. The pews and other fittings will be of pitch-pine, except the pulpit, which will be of carved stone. Exclusive of the gallery, seating accommodation will be provided for 318 persons. Messrs. Bridgman and Bridgman, of Torquay and Paiginton, are the architects, and Messrs. Reeves and Sons, and Pull, of Tonnes, the contractors.

NEW CHAPEL FOR THE TROY ORPHAN ASYLUM, TROY, N. Y.
WARREN SMITH & BISCOE ARCHITECTS



THE THOMASSON CO. OP. B. R. BOLTON



Bradshaw & Co. ARCHT.
Bolton.

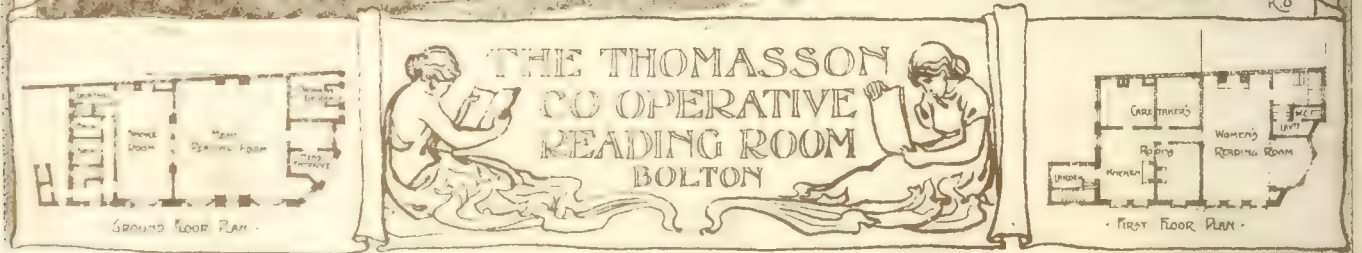
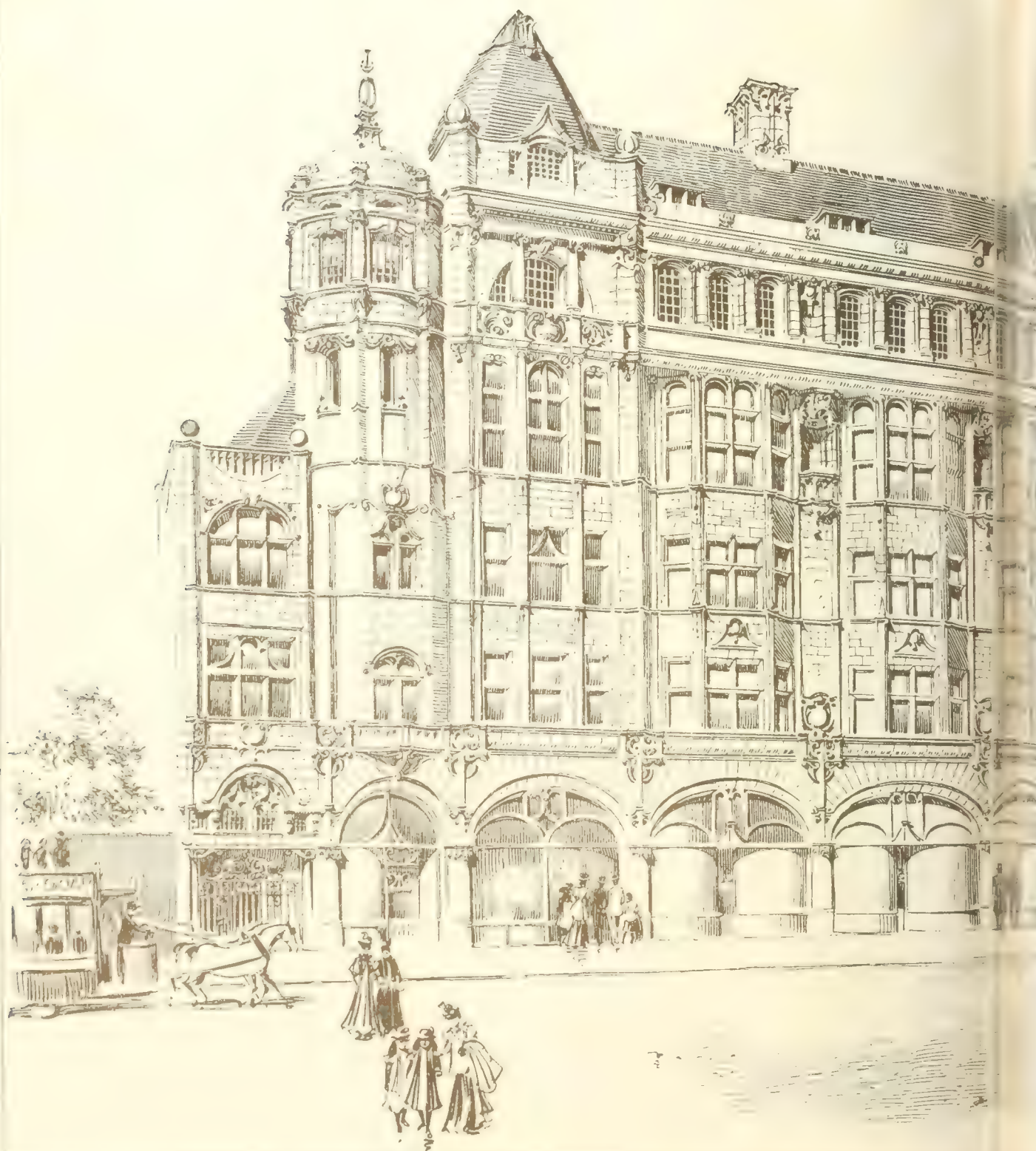


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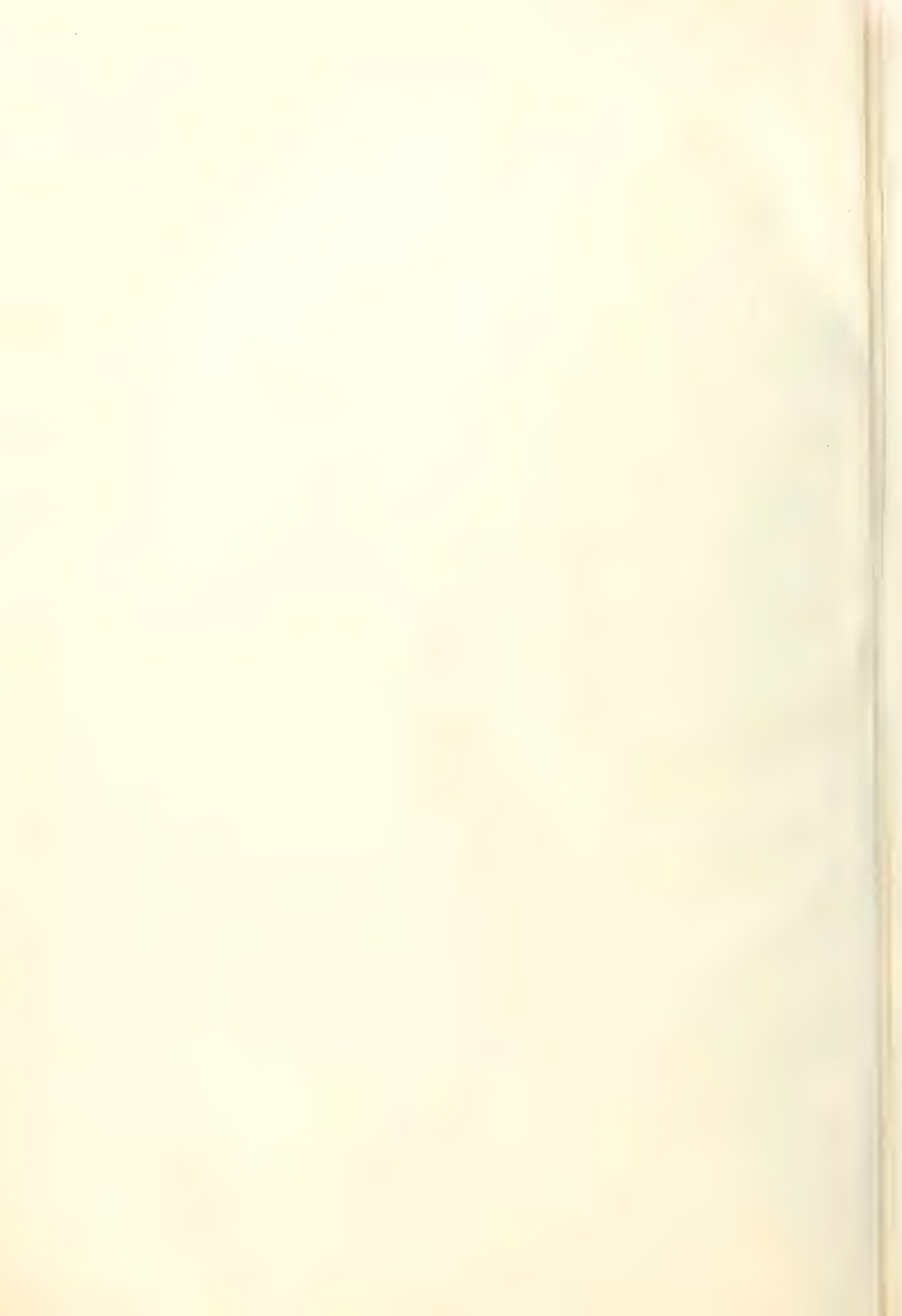
THE LEYSIAN MISSION. CITY ROAD, E.C.



APR. 19. 1901.

BRADSTON and GASS, ARCHT.
ARCHITECTS, DALLAS, 1901.

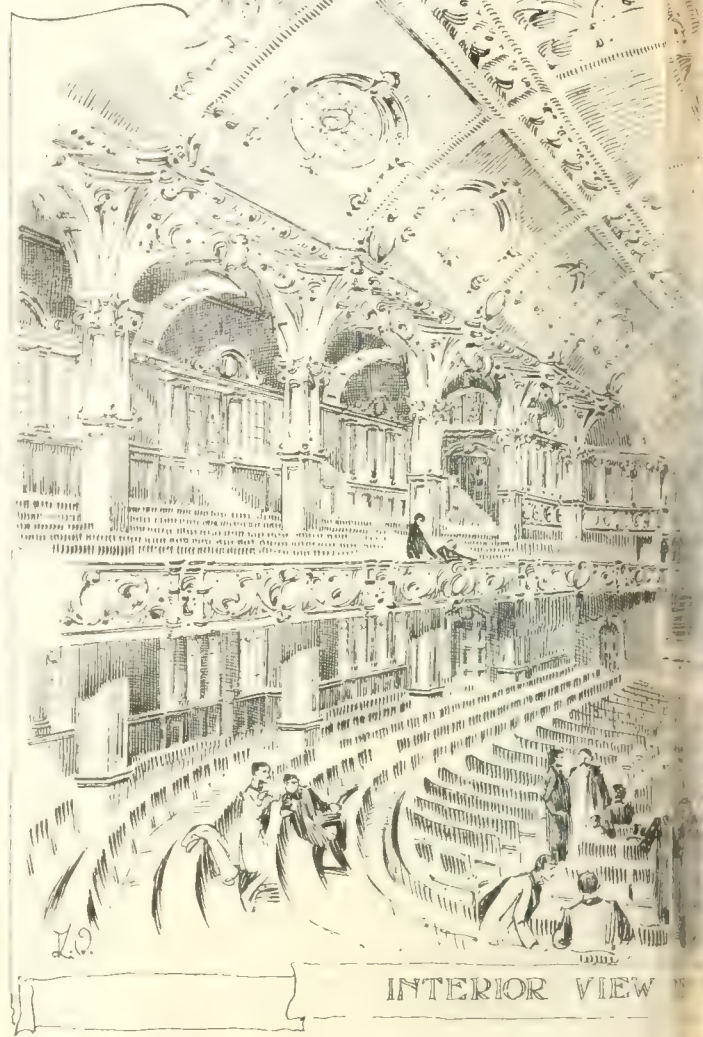




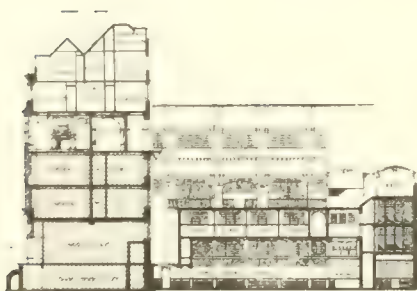
THE ELYSIAN MISSION.



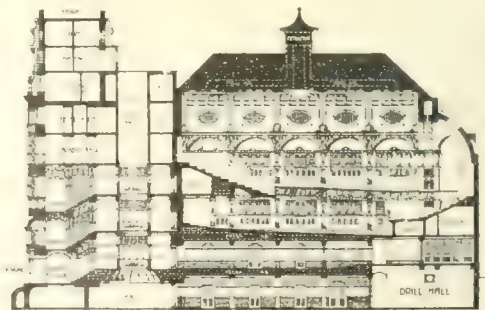
VIEW FROM LICH HALL, TOWARDS STAIRS



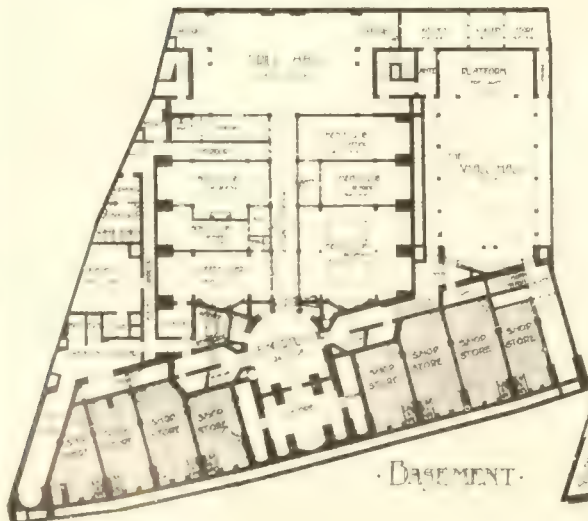
INTERIOR VIEW



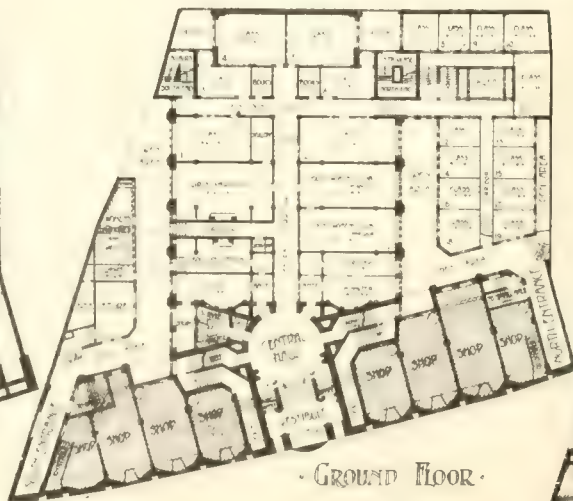
SECTION - SMALL HALL.



LONGITUDINAL SECTION - LARGE HALL.



BASEMENT.

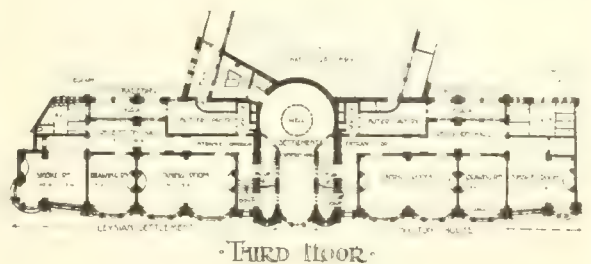
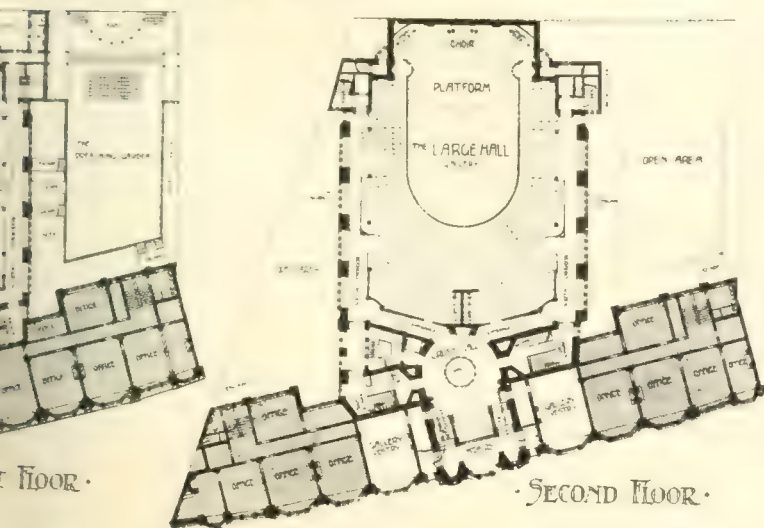
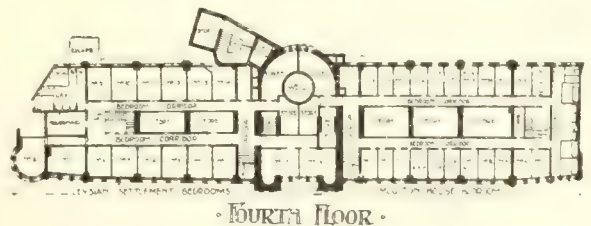
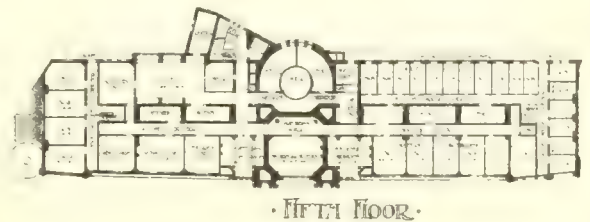
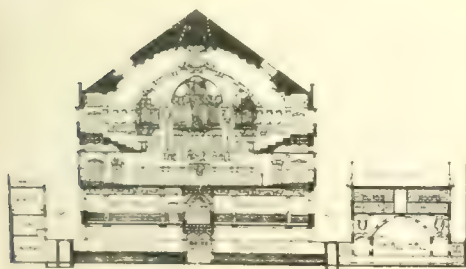
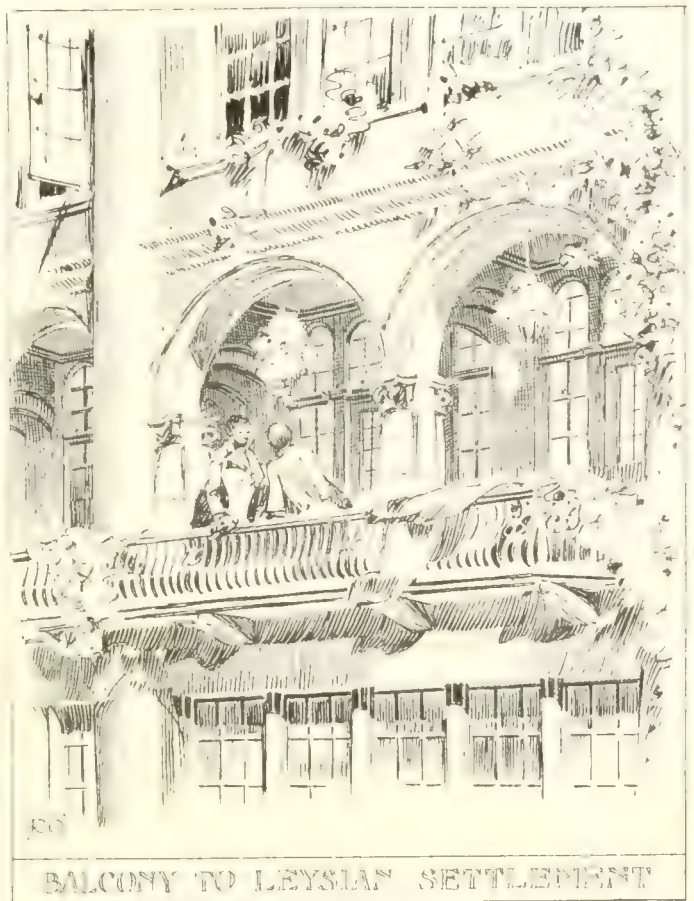
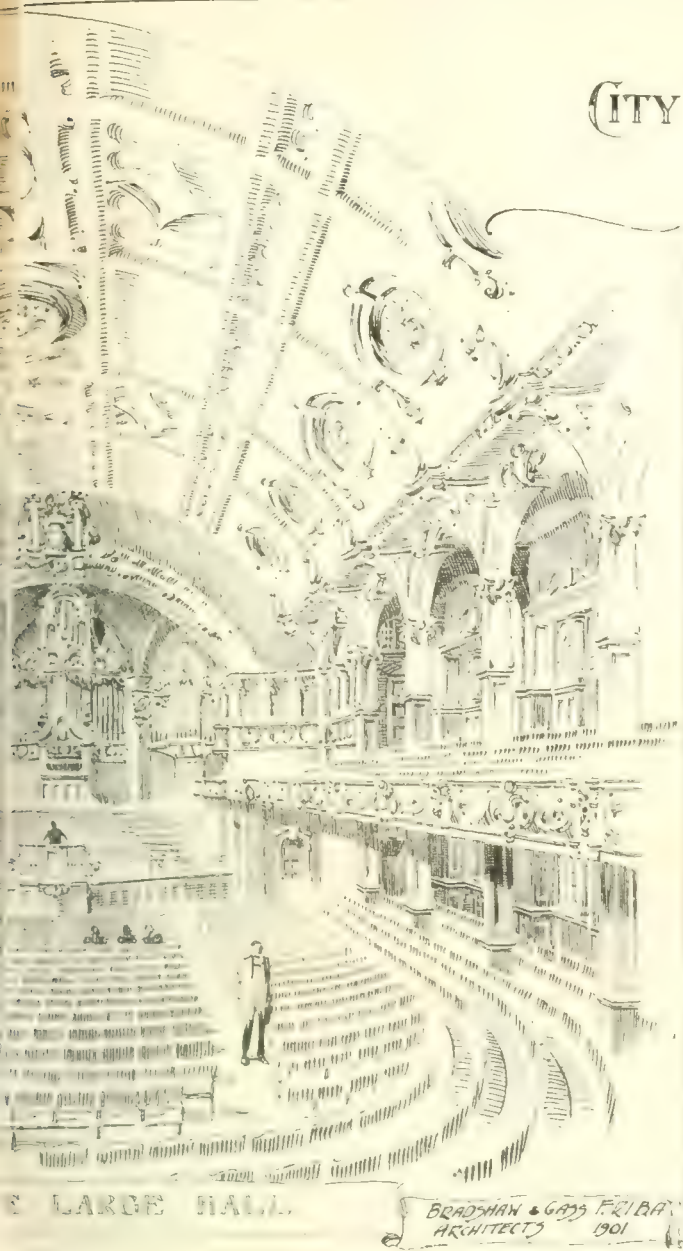


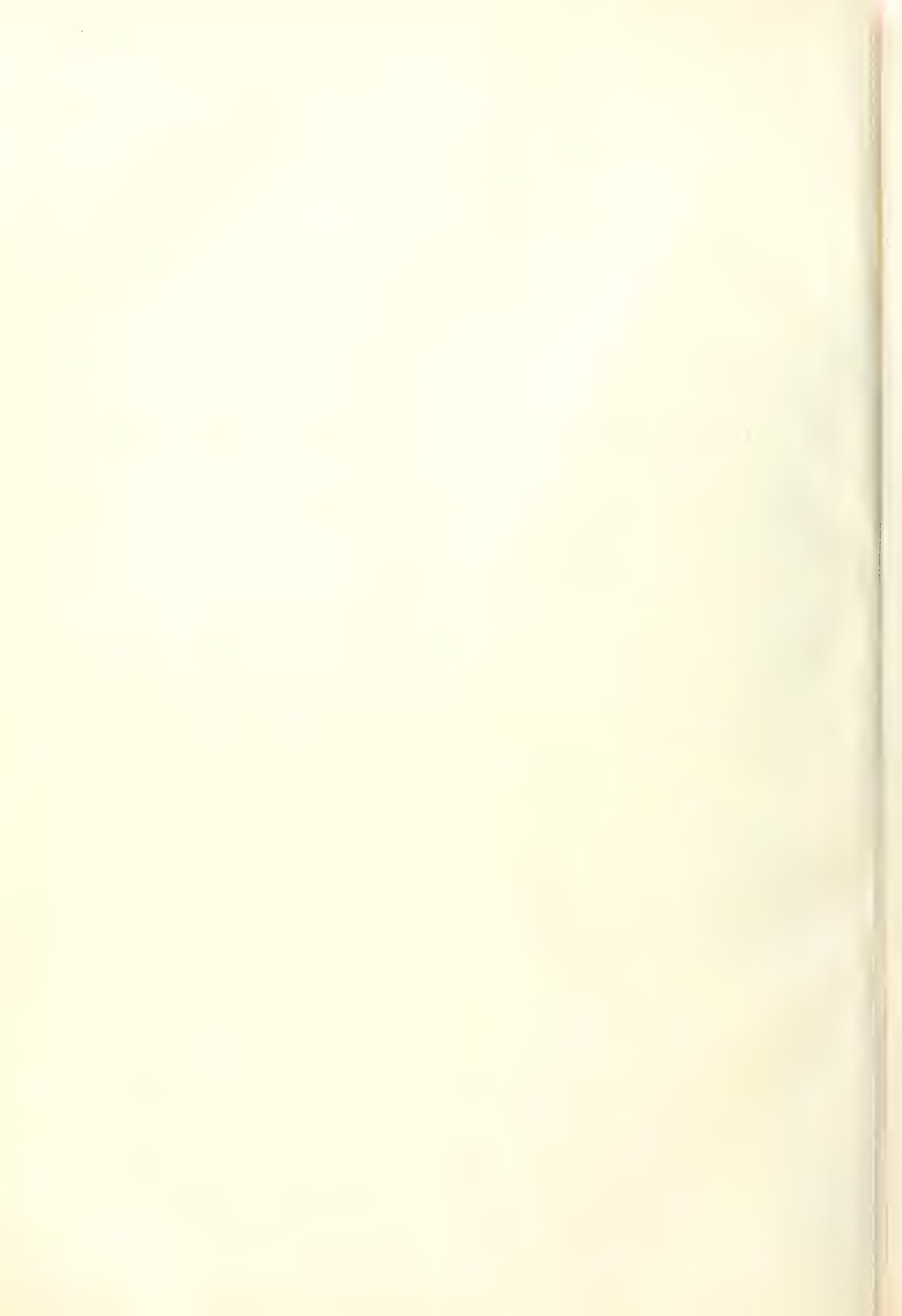
GROUND FLOOR.



CITY ROAD, E.C.

BRADSHAW AND GAGG, FRIBS.
ARCHITECTS, BOLTON. 1901.





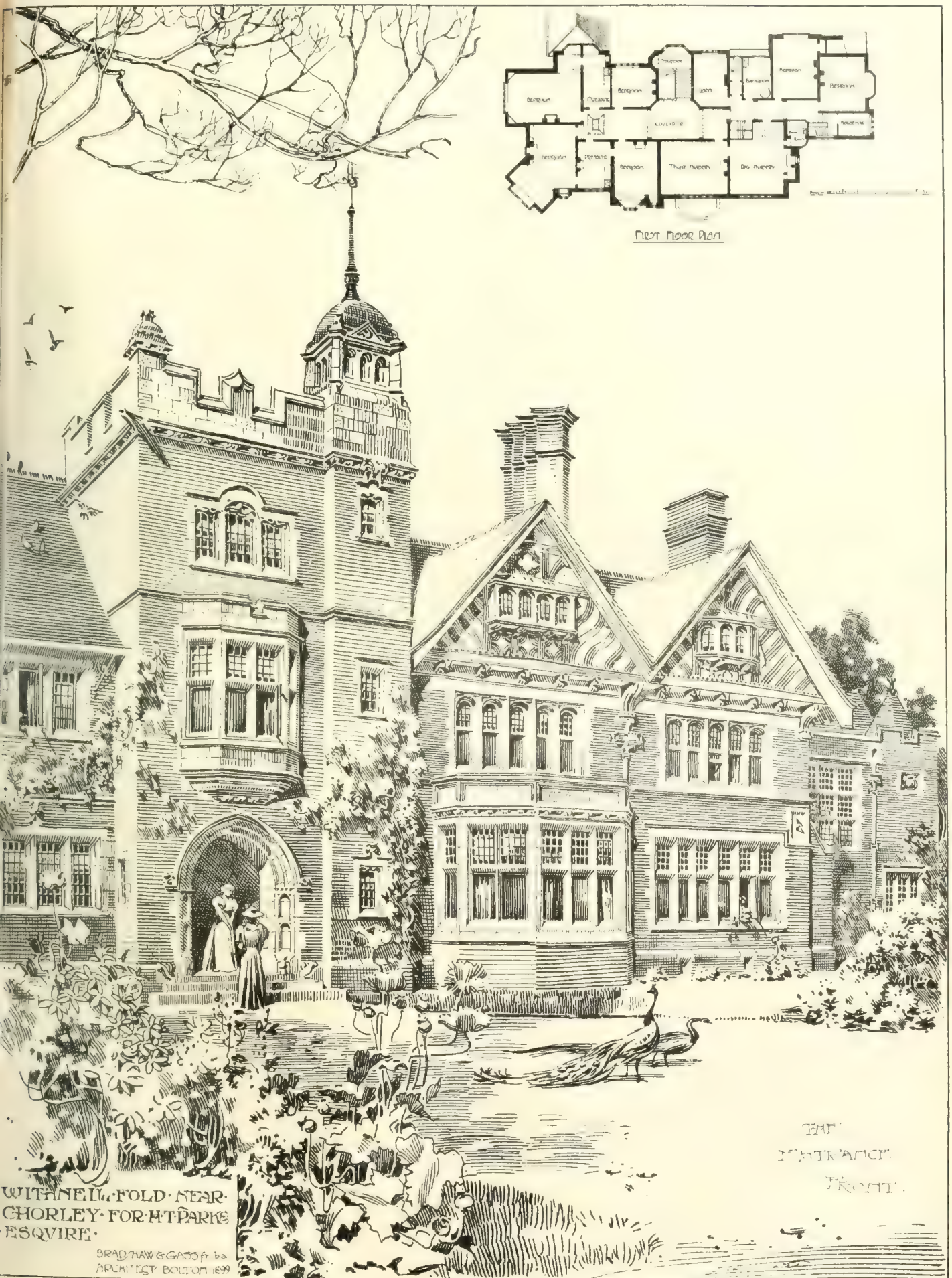




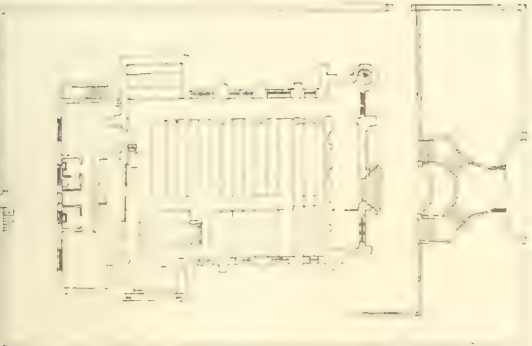
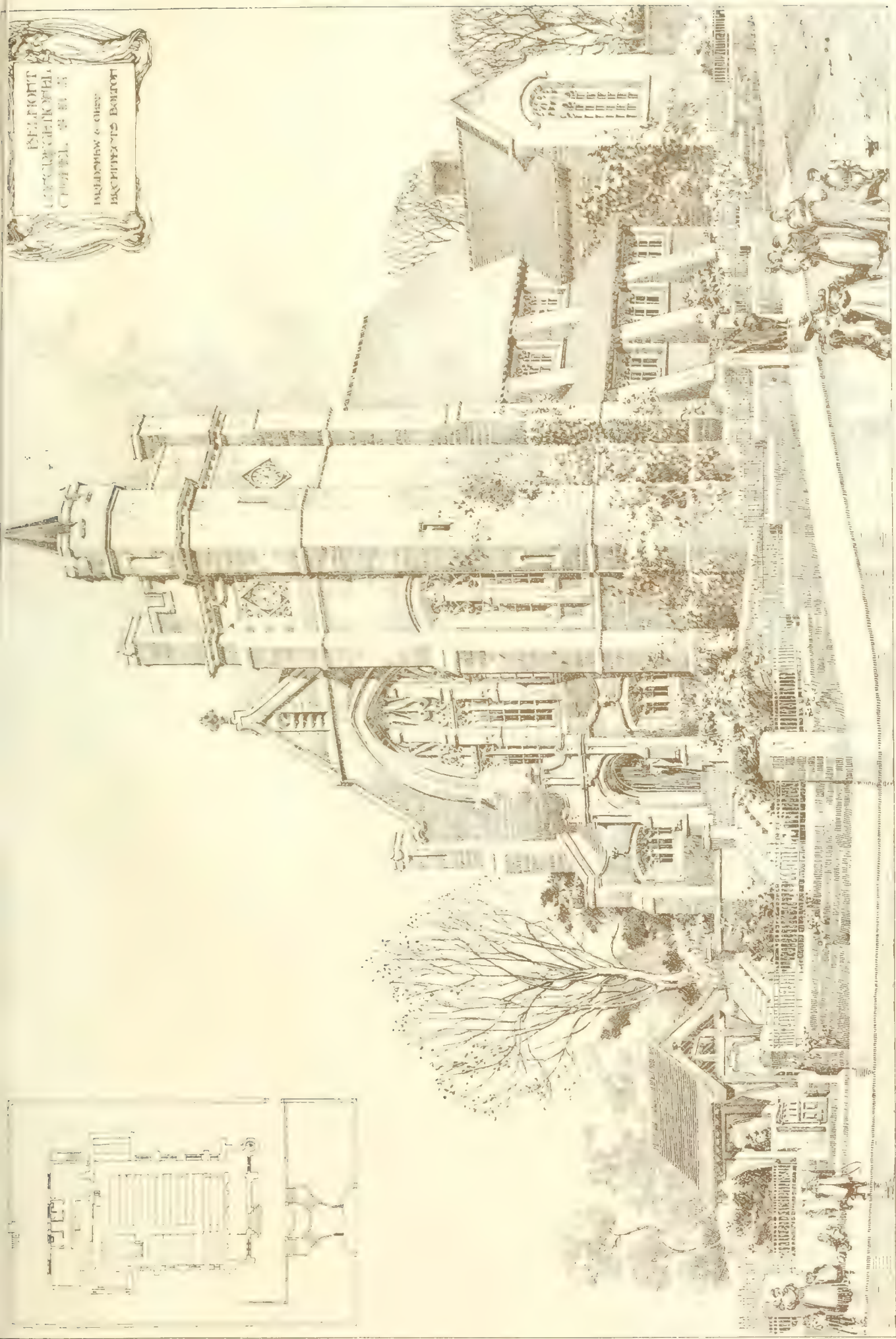
WITHNELL FOLD NEAR
CHORLEY FOR MR PARKES
ESQVIRE

BRADshaw & GASS ARCHT
BOLTON 1899

APRIL 19, 1901.



BELMONT
 CHURCH
 CHURCH
 BELMONT







LEGAL INTELLIGENCE

TEMPORARY STRUCTURES AND THE BUILDING ACT.—At Westminster Police-court, on Tuesday, several summonses were heard against the occupiers of premises in the Victoria district for infringements of the London Building Act by erecting structures without the consent of the London County Council. Mr. Chivers, who supported the summonses, said they were taken out in reference to stands erected on the day of the funeral of Queen Victoria. Some of the erections were in shop windows, and one on the roof of a house, and he submitted these were structures for which plans should have been approved. The stands were put up at the last moment, and sometimes in a very loose manner, and, unless they were submitted to the Council, the district surveyor had no knowledge of where they were. The defendants were Messrs. Hamilton, printers and stationers, of Buckingham Palace-road; the Belgrave Bakery Company, Victoria-street; Douglas Brighton, builder, Lower Grosvenor-place; and Walter Beaton, builder, Hindon-street. Fines were imposed varying from 3s. and 21s. costs to 40s. and two guineas costs.

CHIPS.

Memorial-stones of a Congregational chapel were laid at Waring Green, Brighouse, on Saturday. The chapel will cost £2,600, and is being built from plans by Messrs. Sharp and Waller, of Brighouse.

On Wednesday week the chairman of the Greenwich Board of Guardians laid the foundation-stone of a new block of cottage homes to be erected at Sidcup, Kent, for the accommodation of about four hundred children. The work is to be carried out by Mr. Thomas Rowbotham, Small Heath, Birmingham, whose contract amounts to £110,777.

The memorial to Queen Victoria in Perth, Western Australia, is to consist of a cathedral tower for the church of St. George, and a peal of eight bells.

A new Union Chapel, which has been erected on the Wisbech-road, Lynn, was opened on Thursday last week. It replaces the old chapel in Market-street, in the centre of the town. It is in the Early English style, will seat 320 persons, and is fitted with the electric light. The cost is estimated at £1,470.

The Hull Art Sub-Committee have unanimously resolved to adopt a plot of land on the Anlaby-road as the site for the new art school, and this recommendation was adopted by the corporation of Hull on Tuesday.

A Local Government Board inquiry is to be held at Middlesbrough, on Saturday in next week, the 27th inst., concerning an application of the Middlesbrough Corporation to borrow £23,963 for extensions at the asylum.

The opening of a free library took place at Barmouth on Wednesday. The building has been erected primarily to receive the library of Miss Frances Power Cobbe, which she has undertaken to bequeath to the town.

A proposed loan for £1,000 was the subject of an inquiry by Colonel Marsh, Local Government Board inspector, at Winsford on Friday. Mr. J. H. Cooke, clerk to the urban district council, explained that the loan was intended for sewerage works in two of the main thoroughfares—Chester-road and Delamere-street. The system of sewerage disposal is a novel one. There are two filter-beds, one on each side of the river Weaver; the sewage is turned on to the beds, which are composed of cinders, and drains into the river. Dr. Vacher said he had taken samples from the river, and found nothing unfavourable. There was no opposition to the loan.

Important developments of the Birkdale and Ainsdale portions of the Ince-Blundell estates of a new esplanade will extend from Weld-road to Seaside Station, Ainsdale, the new station which is being constructed on the Cheshire Lines Extension Railway. This station will be opened shortly, and will be in connection with the village of Ainsdale by a new road which has been made across the sandhills, starting from the upper end of Station-road, Ainsdale. The distance to be covered by the new esplanade will be two miles and three-quarters, and when completed will, with the existing esplanade and the Southport Promenade, give a length of six miles on the edge of the shore.

A new organ, built by Messrs. Henry Willis and Sons, of London, has been placed in the parish church of Thurston, near Bury St. Edmunds, at the cost of Sir E. W. Greene, Bart., M.P.

The *Wiener Zeitung* published on Monday an Imperial Rescript providing for the erection of a gallery for painting, sculpture, and architecture in Prague for the benefit of both races in Bohemia, the Institution to become ultimately the property of the Kingdom of Bohemia.

It is estimated that £70,000 will be expended in the present year on the new building ship and shops at Devonport. Other prominent works at the yard will absorb £1,000 more.

WATER SUPPLY AND SANITARY MATTERS.

BOWDLEY.—The ceremony of turning the first sod of the Bowdley Waterworks was performed on Monday by the mayor. The corporation have adopted a scheme put before them by Mr. Berrington, C.E., of Wolverhampton, and will get their supply of water from a well bored through the new red sandstone near Blackstone Rock, on the Severn side. There is a 12in. bore hole, sent down a depth of 200ft., and this will give a supply of 300,000 gallons of water per day. The water is to be pumped to a reservoir on Mount Pleasant, a spot notable for its clump of firs. The reservoir at this point will afford storage for 200,000 gallons of water, and will meet the wants of the lower part of Bowdley. There will be another reservoir at an elevation of 535ft. above sea-level, on the Cleobury-road, and this will store 60,000 gallons of water, and supply the high-lying part of Bowdley. The contract for the work is £10,600.

NEW METHOD OF SEWAGE TREATMENT AT BIRMINGHAM.—The Birmingham Tame and Rea District Drainage Board adopted on Tuesday a scheme under which a piece of land is to be sold to the Birmingham Corporation for the erection of a destructor, the heat from which will be utilised for the generation of electrical power to be supplied to the farm, on payment by the Board. The chairman (Alderman Baker) pointed out that this would effect a saving in the cost of distributing the sludge, and would enable the whole of the farm, instead of only the Salfrey portion, to be utilised for this purpose. It was decided to apply for sanction to loans to the amount of £22,000 for destructor plant in connection with the scheme. On the adoption of the works committee's report being moved, Alderman Clayton pointed out that the recommendations of their engineer, Mr. Watson, appended to it involved a complete change in their system—namely, the adoption of the bacterial treatment of sewage. He suggested that if they had had the aid of modern science earlier they would have required a great deal less land. The chairman and others replied that the new treatment was only in the experimental stage three or four years ago.

His Majesty the King has consented to become patron of the Royal Architectural Museum, and thus the Royal patronage accorded to the museum for so many years by Queen Victoria will be continued.

The Portman Market, Oxford-street, which has been rebuilt at a cost of £40,000, was reopened yesterday (Thursday). The market, the site of which is rectangular in form, covers an area of 43,426sq.ft., and new buildings of iron and steel have been erected at a cost of £40,000. These consist of eight avenues, radiating from a central point, where there is a dome 54ft. from apex to pavement, together with a west, a north, and an east avenue. The number of stalls is about 180, and in addition there are some shops on the street frontages. The architects were Messrs. Gordon and Gunton, the builders Messrs. Perry Bros., and the engineers, Messrs. Westwood and Co., Ltd.

A new Baptist church at New Prestwick, in the burgh of Ayr, to take the place of a hall, was opened on Sunday. The edifice is seated to hold 350 persons.

The foundation-stone of the Stepney Union Schools was laid on Monday at Stifford, Essex. The schools were rendered necessary by the dissolution of the South Metropolitan School District at Sutton. The site was purchased for £10,000, and the buildings, which will accommodate 200 children, are to be erected at an estimated cost of £35,000.

The Archbishop of Canterbury consecrated, on Friday, the private chapel in the new archiepiscopal palace at Canterbury. The new chapel has been erected from designs by Mr. W. D. Caroe, architect to the Ecclesiastical Commissioners, by Messrs. John Barker and Co., of London, contractors for the alterations and additions to the palace. There are two rows of stalls on each side of the chapel, which, like the panelled roof, are carved in fumigated oak, and on the ends of the stalls are figures of the archbishops from St. Augustine to Dr. Benson. The walling of the chapel is of Corsham stone, and the facing of white Sicilian and black marble.

The annual dinner of the Architectural Association will take place at the Criterion Restaurant, Piccadilly-circus, on Friday, May 31.

The Wigtownshire County Council have raised the salary of the road surveyor, Mr. J. D. Smith, from £200 to £250 a year.

The urban district council of Heywood, Lancs, have appointed Mr. William S. Johnston, of Sheffield, clerk of works, with the probability of being appointed the manager of the new electric works when they are completed, if his services prove acceptable to the committee. There were 117 applications for the position.

Trade News.

WAGES MOVEMENTS.

THE LABOUR MARKET IN MARCH. The monthly report by the Labour Department, based on 2,508 returns—viz., 1,777 from employers, 605 from trade unions, and 126 from other sources, states that the decline in the labour market noted during the past few months has given place during March to a slight improvement, affecting most of the important groups of industries, except the textile trades. The state of employment is, however, materially worse than a year ago. In the 143 trade unions making returns, with an aggregate membership of 544,688, 19,618 (or 3.6 per cent.) were reported as unemployed at the end of March, compared with 2.9 per cent. in February, and with 2.3 per cent. from which returns were received for March, 1900. Employment in some branches of the building trades has been rather better. The percentage of unemployed union members among carpenters and plumbers at the end of March was 4.7, compared with 5.2 per cent. in February. The percentage for March, 1900, was 2.6. In the furnishing trades employment has continued to improve in all branches. The percentage of unemployed union members at the end of March was 3.6, compared with 6.4 per cent. in February, and 2.4 per cent. in March of last year. Of the 52 new disputes in March, four occurred in the building trades. The changes in rates of wages reported during March affected 196,360 workpeople; but the upward and downward movement nearly balanced each other, the net effect on wages being practically nil.

AMALGAMATED SOCIETY OF CARPENTERS AND JOINERS.—The monthly report of the above society shows an appreciable improvement as regards employment. The number on out-of-work donation is now 2,696 out of a total membership of 66,023, representing a little over 4 per cent., whilst there are 1,689 on sick benefit.

ABERDEEN.—The lock-out in the plaster trade, which has lasted seven weeks, terminated on Tuesday night, when the employers received a letter from the operatives agreeing to compromise the dispute on the wages question by accepting a reduction of 4d. per hour, the wage now to be 8d. per hour. Work was resumed yesterday (Thursday). About a hundred men have been affected by the lock-out.

BARROW-IN-FURNESS.—The bricklayers' labourers at Barrow struck work on Monday because the master builders decline to advance their wages from 6½d. to 7d. an hour. The latter is the rate paid to labourers working at Vickerstown; but this is because they have farther to go. The building trade is very brisk in Barrow, and a strike will cause much inconvenience.

BELFAST.—The strike in the Belfast building trade, after almost a year's existence, was settled on Tuesday by arbitration; but the terms will not be disclosed for the present. Between two and three thousand persons variously employed in the trade were affected by the strike.

BRIDLINGTON.—The joiners' strike at Bridlington, after lasting a year, has been settled. The men demanded 8½d. an hour, but have been taken back at the old terms—7½d. an hour.

DARLINGTON.—The bricklayers connected with the Operative Society, London Order, came out on strike on Monday, except in one or two instances in which small employers had conceded the claim for an advance of wages. Three months' notice had been given for an increase of wages from 9d. to 10d. per hour, and this the leading builders refuse. There are over 100 men out. Some important work is being stopped, including the erection of the new locomotive works of Messrs. Robt. Stephenson and Co., Ltd., the contract for which is in the hands of Mr. Lance, of Newcastle. There is another union of bricklayers in the town having its headquarters at Manchester, and the men in connection with this Order have not struck.

Owing to the Easter holidays, last week's business at the Tokenhouse-yard Auction Mart was practically confined to two days. The bulk of the properties submitted were left unsold, many failing to attract even a single offer. Altogether the realisations amounted to the insignificant total of £14,845.

The time for sending in designs for the Houses of Parliament competition, Western Australia, has been extended to May 14. The original date was April 16.

At the last meeting of the Town Improvement Committee of Newcastle Corporation, plans were presented on behalf of the Co-operative Wholesale Society for the erection of extensive premises adjoining their large warehouse in West Blandford-street. The plans showed that the new building will be five stories high.

Our Office Table.

The only foundation for the story, Mr. J. T. Micklethwaite, the surveyor to the fabric, states, through the giving way of an iron pin which had

building."

Holyrood Palace, Edinburgh, which was for some time closed for repairs, has now been reopened to the public. From the great western

The ceremony was drawn up at the meeting of Antiquaries, held in London on the 26th ult., and the preservation of Stonehenge, were fully discussed on Friday at Stonehenge by the committee and the owner, Sir Edmund Antrobus, who was accompanied by his architect and adviser, Mr. Detmar J. Blow. Representatives from the Society of Antiquaries and the Society for the Protection of Ancient Monuments were among those present. The resolutions were generally approved, and it was not found necessary to alter them in any detail. The committee thought it would be advisable first to raise and make secure the huge monolith now hanging over the Altar stone (No. 55 B., according to the numbering on Mr. Petre's plan). With regard to the stones which have recently fallen down, an endeavour will be made to spring them into position again, and the stones numbered 6 and 7 will be strengthened so as to prevent the lintel from falling, as some of the stones mentioned are far from safe. It has been decided to proceed with the scheme, under the supervision of Mr. Blow and an engineer, as soon as the weather is favourable, possibly by June, and the work will be carried out entirely according to the recommendations of the committee. The representatives of the Wiltshire County Council and other local bodies interested are in favour of the recommendation to divert the footpath now passing through the outer earth circle, and to inclose the whole of the stones with

"THE True Principles of Stage Scenery" were discussed by Mr. Percy Fitzgerald in a lecture delivered on Tuesday night before the Society of Arts, with Mr. Clement Scott in the chair. Mr. Fitzgerald described the present scenic system as based on a number of shifts and devices, all of the most primitive and infantine kind, so transparent in character as not to impose on a child. All its effects were produced by rule of thumb. In short, it was utterly unscientific, without laws or principles. The scene, which pretends to be the realm of illusion, was in this respect the coarsest and most prosaic of institutions. The difficulty was not to know what was known as the "built-up system," which was indeed a worse abuse, that cumbered all dramatic movement. Trap-doors, sky borders, cloth clouds, and other features of the stage all conducted, under present conditions, to disillusion; and the difficulties of the true artist were increased by the methods of modern lighting, which revealed rather than con-

chandeliers hung over the actors. These furnished a central zone of light, within which the actors kept. The rest of the stage was not exactly dark, but misty, and the surrounding scenery was much like the indistinct details on a tapestry. The result was that the figures of the actors stood out in relief like statues—every line in their expressive faces was seen. The modern searchlight illumination of the actors and the stage was most detrimental. A great improvement would be effected if it were borne in mind that the scale of the human figure—that is, of the actor—was a constant one, and therefore whole streets, squares, cathedrals, and palaces ought not to be crowded on to a stage—simply by the device of reducing their size. On the other hand, small objects, cottages, and garret interiors should not be falsely enlarged. A sound, general principle would be to show just so much of the surroundings as would be in immediate relation to or contact with the personages were they in real life. A discussion followed, in which Sir George Birdwood, Mr. Hugh Stannus, and Mr. Egerton Castle took part.

In connection with the Home Arts and Industries Association, the seventeenth annual exhibition of wood-carving, inlaying, repoussé metal-work, pottery, baskets, hammered iron, embossed leather-work, bookbinding, rugs, toys, stencils, handspun linen and woollen fabrics, lace, embroidery, smocking, plain needlework, knitting, and will be held in the Royal Albert Hall on Thursday, May 16, and following days. A potter will throw pots on a wheel, and demonstrations will be given in spinning and weaving in flax and wool, wood-carving and inlay, metal repoussé, leather embossing, bookbinding, basket-making, embroidery, lace-making, toy-making, and stencil-cutting.

FOLLOWING the lead long since set by Germany, France, Austria, and the United States, a British School of Archaeological Research has just been established in Rome by the universities of the United Kingdom, and was formally inaugurated on Thursday in last week, by Lord Currie, the British Ambassador. The institute is for the present housed in the Palazzo Odescalchi. Professor Rushforth, of Oriel College, Oxford, has been appointed the director of the school, and the foundation of an art library has been laid. At the inaugural ceremony a week since Lord Currie was supported by a company numbering over one hundred, including the Archbishop of York, Canon Oxenham, the Rev. Dr. Gray of the Scottish Presbyterian Church, and others of the English-speaking clergy; Mr. Pelham, President of Trinity College, Oxford, and Camden Professor of Ancient History; Cavaliere Lanciani, Commendatore Boni, representing Italian archaeology; Professor Petersen, President of the German Institute; and the Abbé Duchesne, of the French School.

In New Zealand there are at present three provincial architectural associations, viz., those of Auckland, Wellington, and Christchurch, and steps are being taken to form an Institute of Architects in Dunedin. Mr. Wales, Sen., of Messrs. Mason and Wales, is acting chairman of the committee appointed to draft a constitution for the proposed Dunedin Institute, and Mr. Louis Salmond, of Messrs. Lawson and Salmond, Dunedin, is acting secretary. The idea of forming a New Zealand Institute of Architects has recently been made, and it is anticipated that the movement will soon take practical shape.

A PLEASING presentation took place on Wednesday evening, when representatives of the employés of Messrs. R. Corben and Co., contractors, Maidstone (late A. N. Pryer and Co.), waited on Mr. R. Corben at his residence, "Ellington," Tonbridge-road, to present him with an illuminated address and a silver cigar-case, on the occasion of his 50th birthday, and in celebration of the 25th anniversary of his association with the firm. The address was very fittingly worded. It bore the names of all the subscribers, and had been handsomely illuminated. Mr. M. L. Crow, accompanied by some half-dozen foremen from the different departments of the works, acted as spokesman, and voiced the true feelings of the men when he mentioned the esteem and regard in which they held Mr. Corben. They wished him continued health and prosperity.

Sir Henry Campbell-Bannerman will open the new House of Commons at the House of Commons, Westminster, on Monday, May 14, early in June.

MEETINGS FOR THE ENSUING WEEK.

- MONDAY. Royal Institute of British Architects. "The Classification of Romanesque and Gothic Architecture," by Francis Bond, M.A. 8 p.m.
Society of Arts. "Alloys," Cantor Lecture No. 1, by Sir W. C. Roberts-Austen, K.C.B., F.R.S. 8 p.m.
- TUESDAY. Institution of Civil Engineers. Discussion on "Modern Practice in Manufacture and Distribution of Gas." 8 p.m.
- WEDNESDAY. The Society of Architects. Annual Dinner at "Princes' Restaurant, Piccadilly, W. 6 for 6.30 p.m.
Society of Arts. "Patent Law Reform," by Alexander Siemens. 8 p.m.
- THURSDAY. Institution of Civil Engineers. "James Forrest" lecture on "Chemistry in its Relations to Engineering," by Professor Frank Clowes, D.Sc. 8 p.m.
Society of Architects. Lecture by Ellis Marsland. 8 p.m.
Carpenters' Hall Lectures. "Tools," by A. Buchanan. 8 p.m.
- FRIDAY. Building Trades Exhibition. Conference on "The Standardising of Bricks." 4 p.m.
Society of Arts. "Polyphase Electric Working," Howard Lecture No. 1, by Alfred C. Eborall, A.I.E.E. 8 p.m.
Glasgow Technical Craftsman's Society. Business Meeting. 8 p.m.

The ceremony of unveiling the memorial statue of the late Lord Plunket, Archbishop of Dublin, was performed on Tuesday by the Lord Lieutenant (Earl Cadogan) at Kildare-place, Dublin. The statue is of bronze, and life-size. The sculptor is Mr. Hamo Thornycroft, R.A.

Marble quarries have been discovered in Alaska which are said to be almost as valuable as the gold mines there. The quarries are in the southern part of the territory, and the marble is said to be of finer quality and more beautiful than any now produced in the United States, and fully equal to Italian marble.

Mr. Horatio Porter, M.A., A.R.I.B.A., the son of Mr. F. W. Porter, J.P., of 16, Russell-square, was married to Miss Minnie Bidder, the daughter of the late Mr. G. P. Bidder, Q.C., J.P., of Ravensbury Park, Mitcham, at St. Stephen's, Gloucester-road, on Wednesday week.

The King has been pleased, on the recommendation of the Secretary for Scotland, to approve of the appointment of Mr. T. Hudson Beare, now Professor of Mechanical Engineering at University College, London, to the Chair of Engineering in the University of Edinburgh, in succession to the late Professor Armstrong.

The urban district council of Weston-super-Mare decided, on Friday, to proceed with the widening of the Parade at once, and the surveyor was instructed to give orders accordingly to the contractor, Mr. Gibson.

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BUILDINGS.

	April	20
E. A. Johnson, F.R.I.B.A., Merthyr Tydfil	The Secretary, South-street, Chester	"
J. Graham Fairley, Architect, India Buildings, Edinburgh	Alex. Taylor, Castle Cottage, Kildrumny	"
Chas. and Ross, Architects, 66, Duke-street, Chelmsford	T. Johnston, Architect, 11, East-wall, Londonderry	"
Henry Bruce, Architect, County Buildings, Cupar Fife	J. Llewellyn Smith and Davies, Arch., 50, High-st., Merthyr Tydfil	"
T. Johnston, Architect, 11, East-wall, Londonderry	T. Johnston, Architect, 11, East-wall, Londonderry	"
W. Stead, M.I.C.E., County Surveyor, Northallerton	Young and Mackenzie, Archts., Scottish Provident Bldgs., Belfast	"
The Rev. F. Friend, Boroughbridge	T. Johnston, Architect, 11, East-wall, Londonderry	"
J. Platts, Architect, High-street, Rotherham	Thomas Arnold, Architect, Castle Buildings, Llanelli	"
C. G. Smith, Factor, Haddo House, Aberdeen	A. W. Smith, Surveyor, 460, Stratford-road, Sparkhill	"
T. G. Smith, Factor, Haddo House, Aberdeen	C. G. Smith, Factor, Haddo House, Aberdeen	"
Vivian Reynolds, Secretary of Trust, Nancegollan	C. G. Smith, Factor, Haddo House, Aberdeen	"
The Brigade Office, 10, Bystock-terrace, Exeter	C. G. Smith, Factor, Haddo House, Aberdeen	"
John Black, Factor, Cortachy	Tennant and Bagley, Architects, Pontefract	"
C. G. Smith, Factor, Haddo House, Aberdeen	John Black, Factor, Cortachy	"
H. Curtis Card, F.S.I., 10, North-street, Lewes	C. G. Smith, Factor, Haddo House, Aberdeen	"
C. A. Pearce, 1, High-street, Blackwood, Mon.	C. G. Smith, Factor, Haddo House, Aberdeen	"
T. Edgar Fellows, C.E., Surveyor, Town Hall, Willenhall, Staffs	C. G. Smith, Factor, Haddo House, Aberdeen	"
W. Pogson, Architect, 24, Devonshire-street, Carlisle	John Black, Factor, Cortachy	"
C. G. Smith, Factor, Haddo House, Aberdeen	The City Engineer's Office, Municipal Buildings, Leeds	"
Rev. W. J. Heaton, 39, Bath-road, Swindon	C. G. Smith, Factor, Haddo House, Aberdeen	"
Tennant and Bagley, Architects, Pontefract	C. G. Smith, Factor, Haddo House, Aberdeen	"
G. Smith, Architect, Station-road, St. Dunstan's, Canterbury	C. G. Smith, Factor, Haddo House, Aberdeen	"
John McIntyre, Architect, Mun-street, Letterkenny	A. W. Smith, Surveyor, 460, Stratford-road, Sparkhill	"
A. W. Smith, Surveyor, 460, Stratford-road, Sparkhill	J. E. Abbey and Son, Architects, 34, New-street, Huddersfield	"
T. Simpson and Son, Surveyors, 16, Ship-street, Brighton	J. Parkinson, Architect, 7, Church-street, Lancaster	"
James and Morgan, Architects, Charles-street Chambers, Cardiff	T. Winn and Sons, Architects, 92, Albion-street, Leeds	"
Henry Ross, Architect, 15, Cannon-street, Accrington	The Secretary, H.M. Office of Works, Storey's Gate, S.W.	"
A. Sharp, Architect, Pearl Assurance Buildings, Market-st., Bradford	G. K. Mills, Secretary, Paddington Station, W.	"
Sharp and Waller, Architects, 23, Radford-road, Brighouse	James Duncan and Son, Architects, Turf Hill	"
Samuel P. Cross, A.R.H.A., Architect, Carrickfergus, Ireland	M. Stead, Architect, Beckenham-dwike	"
J. Eaton, Sons, and Cantrell, Architects, Ashton-under-Lyne	H. W. Chattaway, Architect, Trinity Churchyard, Coventry	"
A. Saxton Snell, F.R.I.B.A., 22, Southampton Bldgs, Chancery-l., W.C.	E. Morewood Longsdon, Architect, Bakewell	"
J. Somes Story, County Sur., County Offices, St. Mary's Gate, Derby	R. Wilson, Architect, 3, Queen-street, Edinburgh	"
F. H. Livesay, Architect, 107, Newgate-street, Bishop Auckland	W. Clement Williams, Architect, 29, Southgate, Halifax	"
J. W. Moncur, Borough Surveyor, Town Hall, Sunderland	Tom Newman and Son, Architects, Man-street, Allover	"
D. and J. R. McMillan, Architects, 211, Union-street, Aberdeen	A. E. Lambert, Architect, 22, Park-row, Nottingham	"
T. Duncome Mann, Clerk, Embankment, E.C.	H. Faraday Proctor, City Electrical Engineer, Temple Back, Bristol	"
L. Coates, A.R.I.B.A., Waterhouse-street, Halifax	Jas. Jermy, Clerk and Steward, Banhill	"
The Director of Army Contracts, War Office, Pall Mall, S.W.	Young and Mackenzie, Scottish Provident Buildings, Belfast	"
Edward A. Whiplam, Architect, 59, High-street, Stockton	A. Marshall Mackenzie, Architect, 348, Union-street, Aberdeen	"
H. C. Scaping, Architect, Court Chambers, Grimsby	Austen and Idey, Architects, Lancaster	"
J. Sharp, Surveyor, 5, Sunnyside, Borough Green, Wrotham	Wm. E. Putman, A.M.I.C.E., Boro' Engineer, Town Hall, Morley	"
Carby Hall and Dalby, Archts., Prudential Bldgs., Park-row, Leeds	Henry Maddern, Architect, 26, Clarence-street, Penzance	"
William and Segar Owen, Architects, Warrington	J. F. Walsh & Graham Nicholas, Archts., Bank Chambers, Halifax	"
H. G. Whyatt, A.M.I.C.E., Boro' Eng., Town Hall-sq., Grimsby	R. G. Nicol, Harbour Engineer, Harbour Eng.'s Office, Aberdeen	"
The Company's Engineer, Buchanan-street Station, Glasgow	R. Horsfall and Son, Architects, 22A, Commercial-street, Halifax	"
The Gen. Branch Archt.'s Dept., County Hall, Spring Gardens, S.W.	W. E. Mitchell, Son, and Guttridge, 9, Portland-st., Southampton	"
The Secretary, H.M. Office of Works, Storey's Gate, S.W.	J. J. Townsend, Surveyor, Anfield Road	"

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FIRE RESISTANCE: ITS MATERIALS AND ARCHITECTURAL TREATMENT.

THE greater attention that has lately been bestowed on fire-resisting construction and methods of fireproofing must have been evident to all visitors to the Building Trades Exhibition during the last week. It is the first time, we think, a separate section of the exhibition has been set apart for the purpose, and though the collection does not represent all that has been introduced of late years, it represents several important methods of applying mechanical and chemical agencies to the construction of buildings; of not only arranging the materials of structures like walls, floors, and roofs to resist fire, but of protecting materials from the risk of ignition. For a long time the attempts made to construct "fireproof" buildings failed, for the principles upon which fire-resistance depended were imperfectly grasped by the builder. It was thought if we built largely of iron, no harm could come; that a building with floors of iron girders and brick arches, and naked iron columns could never be destroyed by fire; that stone as well as brick was invulnerable to its attacks. But we soon began to realise the mistake we had made of assuming the incombustibility of these materials, and their non-defection without proof. It was quickly evident that naked unprotected iron construction was the most destructive of all agencies where a fire once took a hold on a building; that it pushed out, pulled and twisted the walls, and rendered the task of fire-extinction exceedingly dangerous. Nor did we at once realise the fact that fires are not so much dependent on the construction of the building nor the materials used in it, as upon the material stored in the building; the inflammable nature of the goods, like cotton or loosely-stacked articles; and largely upon light wooden fittings, staircases, casings, matchboarded and other inflammable partitions which become fertile and rapid means of connecting the fire in one part with other parts. We did not quite realise that it was of no use to have iron and brick in the walls and floors of a building if other parts were of light wood, and if wooden staircases and lifts connected one floor to others. The idea of arresting or cutting off one portion of a building from another, or a division into "risks," has only of late years been practically adopted. Again, as to the value of selecting incombustible materials like iron, it was not at once seen that to be of any value it must be protected from great heat by other materials of equal incombustibility, but of slower conductive power, or non-conducting substances like asbestos wool. Now that we have learned practically, by dearly-bought experience, these facts, our main effort has been rather to employ materials of a refractory nature to clothe and protect our structures, than to build them entirely of iron or steel. One thing, at least, has been taught by the disastrous fires of recent years: that the science of fire-prevention is mainly based on the proper use of protective materials to envelop or incase iron and steel, and other inflammable materials, and to provide means of arresting the spread of fire, such as by the use of fire-resisting partitions and walls, enclosed staircases and lifts. That it is quite as easy to protect a building of wood and ordinary building materials as one built of iron by the employment of suitable covering of fire-resisting materials,

During the last quarter of a century architects have learned a great deal about this subject. Materials and modes of construction have been introduced or invented in great abundance, as anyone may see who visits the Fire Prevention section at the Agricultural Hall. Practical tests of materials and structures have been made from time to time, and the British Fire-Prevention Committee have instituted a series of fire-tests on every conceivable material and structure used in building;—the great extent of their labours may be seen by looking over the reports. They have been officially published under the editorship of Mr. Edwin O. Sachs, and the tests have been largely patronised by leading manufacturers, inventors of fireproof methods, and by the profession. One of the principal developments that have been made in this subject is the introduction of methods for treating wood and other inflammable materials. Of course, this is not altogether new. Many attempts have been made to render wood unflamable. Several so-called "fireproof" paints have been introduced; one of these was Astrop's patent cyanite—a colourless priming or varnish which resists the action of fire. Asbestos paint is also fire-resisting, and we hear of a pyrodene or fireproof liquid used in 1887 for rendering wood and other fabrics flameproof; there is also Blane's fireproof paint used about the same time, besides other chemical solutions for treating theatrical scenery, hangings, and dresses, amongst those used being alum, borax, phosphate of soda, tungstate of soda, &c., and the latter, we believe, has been largely used for rendering textiles unflamable.

Obviously any mode that will exclude oxygen will render wood non-flamable, and thus, if the wood is incased by a layer of bad-conducting material like charcoal it can be protected from further oxidation or injury. One of the modes adopted is to coat the material with an unflamable varnish to exclude the air. One authority says substances subjected to fireproofing treatment carbonise under heat, but do not inflame or afford any aid to the spreading of the fire—a fact that has been attested by Captain Shaw and several of our fire-brigade officials. Timber beams or pillars so coated can withstand intensely high temperatures for some time, or at least till aid arrives. A fireproofing material should possess, we are told by scientists, "the property of forming, when heated, gases or vapours that are not inflammable and non-oxidising, so as to yield an atmosphere incapable of aiding the combustion; and secondly, the power of yielding, when heated, a readily fusible, continuous layer of residue, which coats the partially charred fabric, and excludes oxygen from it." Wood can be treated either by applying to the exterior a solution of the materials or a coating of fireproof paint, or by impregnating the substance of the wood with the material, such as magnesium borate, sodium tungstate, and especially ammonium phosphate; but for the external application of sodium silicate solution, or "water-glass," with asbestos has been considered the best. Both these applications are made. One very interesting exhibit we noticed last week of the "Non-Flammable Wood, Co., Ltd." should be noticed by architects, for they will see specimens of wood and other fabrics treated by a special non-flammable process, which has resisted the severest tests. We refer our readers to a report of fire-tests with a match-boarded partition, and one of "non-flammable" deal coated with "non-flammable" paint, conducted by the British Fire-Prevention Committee. How few architects specify any fireproof coatings even in buildings of wood calling for special protection! Even coating wood with a solution of tungstate or silicate would be a useful precaution against speedy ignition; but, of course, a proper

treatment should include a vehicle and a pigment, as the solution just mentioned, or even starch paste and a pigment such as asbestos powder. The asbestos paint can be made of water-glass and asbestos. But in special structures of wood, canvas, and textile, such as those in a theatre, the most effectual treatment is by an impregnation of the fabric, the numerous small pieces of wood being placed in a closed vessel, the air removed, and the fireproofing material admitted, by which it penetrates into the pores of the wood, as in the non-flammable process.

Various forms of asbestos preparations are before the architect for plastering walls, ceilings, and floors, as we may see in the models and specimens exhibited by Messrs. McNeill and Co., where slag-wool is made in the form of slabs for fireproofing partitions, ceilings, and protecting girders, as well as for covering cisterns, steam-pipes, lining flue-pipes for stoves, and for other purposes of preventing the passage of heat or of protection from frost. In how many modern buildings is asbestos used in any form? Why it is not more used in the shape of slabs or plaster for partitions, roofs, and ceilings, except on the score of expense, is not very clear. There are several new materials that are now made of asbestos fibre. One of these, in a slab form, we have described lately—very thin, hard, and homogeneous in substance, that can be cut or nailed like board, and used for lining walls, partitions, and ceilings, also in veneering wooden doors, &c. Its thinness is a desideratum. Its fire-resisting and non-conducting qualities are important points. In a more concrete form the architect has a large number of inventions for walls, partitions, floors, &c., composed either of concrete and iron or steel combined, a "reinforced concrete" construction, or of ordinary plaster with metal in the shape of wire lathing imbedded on the centre. The Fire-Prevention Section shows several modern applications of both these kinds of construction. In the "reinforced concrete" the concrete occupies some thickness, though there are now partitions made of only 2in. or 3in. in thickness in which steel in the form of wire netting, "Jhilmil" or steel lath, expanded metal, or "helical lathing" is introduced as a core, which gives all the rigidity and strength necessary, with a minimum of thickness. Or rolled ribbed bars of steel can be made the substratum of the concrete for floors or partitions. Then there are partitions constructed of slabs of plaster stiffened by reeds perforated with circular apertures, and with grooved and tongued joints from 2in. to 4in thick, as in the "Mack" system; other patents in which a kind of corrugated-iron sheeting of dovetail section or tubes are made the core for the plaster or cement. Our forefathers knew nothing of these modes of combining fire-resisting materials which we possess, and which can be turned to so many different uses. The advantage of this mode of metal and plaster partition is that it can be formed to any curved or bent shape for coved ceilings, domes, for incasing iron columns and girders, lift inclosures, and other uses.

Till quite recently the most vulnerable parts of our buildings in the case of a large fire were the window and door openings. Modern ingenuity has now been brought to bear, and we have a few methods of rendering our glazed windows less liable to crack from intense heat. Several kinds of glass with wire imbedded have been introduced, by which the pieces of glass cracked by the heat are still held together for some time at least. The most important of the inventions is that of the electro-glazed fire-resisting Luxfer prisms or ordinary quarries that have been on view at the Exhibition, and which we have often described. By this manufacture the pieces of glass are united almost as one mass in copper frames that the most intense heat is unable to detach, while the plates of

glass is welded together not in their position, meeting the progress of the flames, and excluding the inrush of air through the window. Those who have seen the exhibit in these frames showing the results of a fire-test, may see the grid which the copper or electro-plating process has upon the glass panes.

The main question for the architect to consider is to make use of these inventions and applications as he may find a method which can and with the best architectural results. The extra cost for these structural considerations will be more than made up by the saving of area of the floors and partition, and the actual cost is now a negligible quantity. The large black iron window frames or railings, the addition would be necessarily small compared with that of a small building. But why should the consideration of cost weigh in a matter of safety? The risks and fire insurance are necessarily smaller for well-equipped buildings. The architectural treatment of these methods of construction is a still unsettled question. Architects have hitherto tried to shirk the question, as they do sanitary or other uncongenial matters. But there is no reason why the materials and fire-resisting treatment of a building should be made conform to architectural canons. One objection raised is that they conceal construction. Let us take two examples of construction, the fireproof floor and the incased column or stanchion. A few of the systems of fireproof flooring conceal the iron joists; fireclay lintels come below the lower flanges for protection, so that the beams are not exhibited; but why cannot this form be boldly accepted and treated as we should a slab? We can in ornamental ceilings form the surface into panels by bringing down the iron girders and encasing them. With regard to stanchions and columns, their clothing or incasing can be made so as not to destroy their shape or proportion. In the more decorative uses of metal lath and plaster for ceilings and domical roofs, the architect is not restricted to any one form of construction; he is not obliged to fill up his corners between wall and ceilings with great coves and vacant spaces, but may follow closely the forms of his construction. There is no reason why we should resort to a kind of sham bracketing if we wish to adorn a saloon or hall; nor to "construct decoration" for the purpose of using a fireproof material. The whole question of treatment is in the hands of the architect, if he only understands the nature and properties of the materials, and appeals to his judgment and artistic instincts in the use he makes of them.

THE NEW GALLERY.

THE New Gallery is no longer representative of a leading school or influence; we have the unusual strength and charm of Burne-Jones. The gallery, in fact, does not express any one school of, but a number of rather divergent views of art; though in this more comprehensive sense, it represents some of the higher and ambitious aims of men who have devoted themselves to painting. Beginning with the west room, we notice J. M. Strudwick's thoughtfully sentimental work, "Summer Sunset" (96). The cool and sweet tones of the scene are rendered in one playing at the organ in a sort of cloister overhung with rich foliage and fruit, through the arches of which the red-robed figure of a saint appears, remind us of the tenderness and inspiration of Burne-Jones's work; but without the powerful and persuasive influence of that master. There is exquisite minuteness, skilful draughtsmanship, and execution in the embroidered robes of the maidens and details of the convent, an air of ecclesiastical rapture and quiet prevails that is sincere at least; but we take exception to the style of the arcade, which is more Italian than Romanesque, or Medieval. Mr. Frank Spender's

Spender's large landscape, "A Song of Twilight" (98), with its water and reflection, is admirable in its tones of deep shadow and twilight glimmer. Herbert Draper, in "The Naiad's Pool" (105), is a faintly-conceived circular composition; a Naiad, her brow entwined with seaweed, is reposing on a rock—a fisher boy gazes in the water. George Wetherbee has two subjects: (108), "A Perpetual Glade," a landscape seen through lofty stems of trees; and No. 147, "The Boar of Diana," a more ambitious subject—a bold, hilly landscape, broken by giant tree-trunks, with distant glades and sunlit hills in the distance. Diana stands before a large pool equipped for the hunt. Over it, J. Nettleship's "Last of Life" is very realistic and clever; the boar is in a snow-drift in a thick wood; the animal is lapping the ground. C. E. Hallé's "Hero" is feeble in execution. She holds a torch on a tower to direct the course of Leander across the Hellespont. There is a frightened and terror-stricken look in her face as she appears to anticipate the fate of her lover who will be drowned, and in despair she is about to throw herself into the sea. His other works, "Will-o'-the-Wisp" and "The Lorelei," are compositions of poetic interest, and graceful female studies. Lady Stanley's "The Bathers" represent two nymph-like forms on rocks. The quite nude figures are gracefully modelled, and near it is J. J. Shannon's "A Portrait Group" (112), a very effective and pleasing group of the painter's family, masterly in handling and colour. The portrait of "Mrs. Brown Potter" (113) in low, black dress, the chief note of colour being the rich auburn hair, is too theatrical in pose, and not many would say Mr. Harrington Mann's presentment is a flattering portrait of the actress. W. Llewellyn's portrait of "Viscountess Parker" (135) is gracefully handled. The viscountess is seated, and wears a black-and-white costume with drapery background, and dog by her side. Mark Fisher's "View in the Gironde" (132) is sparkling in its brilliancy of colour; Leslie Thomson has an effective seacoast scene, "Sunset," with a laden vessel on the beach (134); Frank Brangwyn sends a very vigorous view of "Old Kew Bridge," strong in colour and handling of brush; and J. L. Pickering a powerful sunset over Argyllshire hills, "The Day's Requiem" (144), in its dark rocky scenery, the hill-tops lit up by a red glow. There is nice sentiment in Alfred Withers' "Evening: Quality Street, North Berwick" (151); and C. Napier Hemy paints one of his realistic seas with a fishing-boat, "Counting the Catch" (157), full of freshness, and vigorous in handling. The shore, with its fish and tackle, and the flicker of light on the waves shows the painter's mastery and technique. Further on Charles W. Wyllie has a pleasing landscape, "Summer," a field of poppies and white bloom near the sea, very truthful in the light and atmosphere (166).

Edward Stott, in "The Year's Youth" (172), a girl feeding chickens in an orchard rich in spring-blossom, is a subtle impression of colour and light. Pretty as a conception is W. R. Symond's "Butterfly Chase," two young girls trying to catch butterflies on a cliff near the sea; the colour is in a light key. Collier Smithers' "A Wind Sprite" (171) and George Henry's "Gold Fish" (176), a girl seated watching a bowl of fish, are interesting and painted with some ability. W. G. Von Glehn has a large and ambitious picture, "L'Enchantement de la Forêt" (182), which he calls "Design for an Architectural Feature," a group of nymphs round a pool in a forest or rocky landscape; strong in composition and colour, but without any apparent claim to be called by the latter title. The work at least is more satisfactory in colour than in others of this painter's work. In the North Room, one of the most sensational pictures is "Buddaluphsberg" (192),

an incident of the War, when Lieut. Quilter and a band of heroic men of the 2nd Grenadier Guards volunteered to save wounded soldiers lying near the burning grass, and ran into the flames, and brought out wounded under fire of the Boers. It is painted with much realistic skill by Mr. J. P. Beadle. Sir James D. Linton's picture, "A Nation's Gratitude Rewards the Brave" (189), is another patriotic picture. S. Melton Fisher has a clever piece of *genre*, "Dreams," a lady asleep on an easy-chair in a drawing-room, where she sees in her dream a girl glaying a harp partly a piece of real life, partly a vision to the sleeper. It is skilfully painted. T. C. Gotch has a decorative little study of a little maid in a pale canary coloured frock against an orange background "A Dainty Rogue" (197). Miss Mary L. Gow's delicate little portrait study (196) is charmingly light. There is fine colour and dexterous painting in the herbage and heather of "Mountain Tops" (198), by Douglas Adams. But let us note a few of the leading subject pictures to be seen in this gallery, notably those of Sir James D. Linton, G. A. Watts, R.A., and T. Austen Brown, before we proceed with the lesser work and portraiture, which is largely in evidence.

Sir James D. Linton, in a large and highly-finished picture, depicts the Casket Scene from the "Merchant of Venice" (201), where Bassanio, the lover of Portia, a rich heiress, who sits watching him, selects the lead casket which contains Portia's picture, and, according to the conditions of her father's will, claims her as his wife. The scene is a room in Portia's house, a handsome Italian interior. Portia, Nerissa, and attendants are in the room, and Bassanio comments on the caskets to himself. Two young girls are singing to the accompaniment of mandolins. The figures of Portia seated, in rich brocaded silk, Bassanio, and the other figures are faultless. The dress and accessories of the chamber are remarkable for their technique, and refined in colour. The architecture is perfect in its detail, and the only fault is the lack of expression and interest on some of the faces.

Among other subject-pictures, those of G. F. Watts, R.A., in the West Room, must be mentioned, perhaps the strongest being "Greed and Labour," a powerful indictment on canvas of capital and labour. Greed is shown as an old man clutching his money-bags close behind Labour, who represents a stalwart working man carrying a heavy basket of tools of all kinds. Mr. Watts has here powerfully presented the economic problem. The face of the youthful Labour expresses energy and vigour. He is heavily burdened with his implements, and in the sweat of his brow he is toiling. The colour is harmonious. Perhaps more pleasing is the little group of amorini called "Trifles Light as Air" (124), a grouping of sportive little plump lithe cherubs in a blue firmament, merry and full of life. "The Slumber of Ages" (123) is more ambitious, and represents Age personated by a mother asleep on a rock with an awakened infant in her lap. The composition is sculptural and powerful.

Byam Shaw's "Diana" (129), showing the great huntress leaping over stream and rocks, is boldly conceived and handled. A very strong subject picture is T. Austen Brown's canvas, "Sunshine and Shadow" (246), a subject just the opposite in style and sentiment to Sir J. D. Linton's or M. Wontner's work—one a scene in luxurious Venetian surroundings full of rich texture and colours, the other a quay or river side, which bank sits a Dutch mother with her infant, with another child near, while on the other side of river are the red-tile roofs of the houses of a town. A gleam of sunshine lights up the distant houses, while the new river bank, with mother and child, are

shadow. There is much technical skill shown in this undoubtedly powerful picture, one of the best of the painter's. Sir Philip Burne-Jones, has a street scene and tountain in Asolo (200 and 207). William Wontner presents a very daintily painted Oriental interior, with a dark beauty reclining on a seat under a tangle of sunlit foliage, her dark eyes and black tresses recalling the poet's line

Scene with ardent-budded eyes,
Amorous, and wishes like to rays
Of darkness, and a brow of pearl,
Tressed with resplendent ebony
In many a dark delicious curl.

George H. Boughton, R.A., paints a gipsy-like nymph, called "A Diana of the Goose Pastures" (204), cleverly; and E. C. E. Perugini has a graceful subject, "Tabby and Tabitha," a young lady and her cat, as a study of portraiture. Percy Bigland's "Mrs. Myles Kennedy" is a graceful work. As a portrait of prosaic every-day life the full-length portrait of "The Earl of Stair, K.T." (225), which hangs at the end of gallery, by Sir George Reid, is noteworthy for its honesty of treatment. The earl stands in a fawn-coloured tweed suit and overcoat, and grey felt hat, and shows us the man simply and straightforwardly. Another pleasing portrait is W. G. Von Glehn's "The Lady Edward Cecil" (227), in a white, low evening dress, with violet sash. We may also mention the following portraits as commendable: Hon. John Collier's "Mr. Rudyard Kipling," in the South Room (36); Arthur Hacker's "Mrs. George J. Frampton," full of character, with a panelled background subdued in colour (32), and J. F. Shannon's "The Lady Carbery and her Children" (234), a very admirable group, refined and quiet in colour. John S. Sargent, R.A., gives us a portrait of Mrs. Garrett-Anderson, M.D. (229), in his masterly style and technical qualities, yet we have seen more successful work of his. His "Duke of Portland," a full length, is not quite a success. The collie dogs are prominent, and there is movement in their drawing. Miss Henrietta Rae has a portrait of Mrs. John Brown, well studied in the bust and face. John M. Reid has a strong piece of sea-painting, with its deep sapphire sea and rocky inlet and fishing-boat in "The Fisherman's Daughter" (237), a study of the Cornish coast. We must note also Ivystan Hetherington's "With Rushing Wind and Gathering Storm" (256), an expanse of marsh near the sea, wind-swept, vigorous in colour. Edward Stott's "Love's Twilight" (245). Robert W. Allan in "Market Morning, Antibes" (261), gives us a new note of colour in the brilliant sunlight effect of the old marketplace. David Carr "The Doctor's Pony" (264), is a large cottage scene by a country lane in a soft evening light, full of mellowness and tone. Near it Herbert Schmalz (265) has an idealised figure of a maiden, half-draped in white, with bright flowing hair, carrying a basket full of grapes and other fruit, descending a hill overlooking the sea; the drawing and colour are a little too artificial.

Turning to the South Room we see several pictures executed in tempera, especially of ideal subjects, which show the capabilities of this medium for painting. Size, or the yolk of an egg, are used in this medium for the mixing of the colours. That the colour so mixed does not become changed, or darker, in time, is a good reason for using tempera for certain class of painting. Joseph E. Southall (66), in "New Lamps for Old," shows a brilliant example of this medium for decorative schemes. The maidens in medieval dress who are represented changing their lamps, and the splendid peacock's plumage, contrivance any oil-colour. Walter Crane has a large subject called "The Fountain of Youth" in tempera: a large allegorical composition, the centre feature of which is a lofty fountain with a colossal figure of a female pouring a stream of water from a large pitcher, while round the basin are numerous figures and

groups of youths and maidens refreshing themselves and partaking of the rejuvenating fluid; old men, people stricken with maladies, women trying to rejuvenate themselves, are all testing the virtues of this pool. Beyond opens a hilly landscape. We do not think Mr. Crane has been so successful here as in other pictures, as "The Mower." Two delightful pictures in this medium by Mrs. Marianne Stokes, "The Jug of Tears" (64) and "Mother and Child" (70), may be mentioned; also John D. Batten's Italian-like treatment (61). W. Graham Robertson has a nice study of a fair-haired little girl in lightish-grey tone (1), and a fresh sea is seen in A. Harvey Moore's "Hauling the Net." Ernest Normand's "Cornflowers" is a pleasing subject of a dark-haired girl in a wood. We must also notice William Padgett's "Old Canal, Flanders" (6), very admirable in its reflection, and not quite quite so sombre as his wont. George S. Watson succeeds in his portrait study, "Gwendoline," a young lady in heliotrope dress holding a straw hat; natural and strong in treatment. Julian Story has a modern study of a lady (Mrs. Sharon) at piano in a light dress with a background of palms and screen; refined in colour. And we must also notice Frank Walton's "Woods and Dells" (11), a fine-shaded woodland; W. R. Symonds' portrait of Mrs. Peart Robinson (12), J. Whipple's "Spring Blossom," crisp and sparkling; George W. Joy's portrait of "Ella" (19), a girl with delicate features in a light pink-figured blouse. Mrs. Evelyn de Morgan's "Attainment," a Rossetti-like composition, depicts a weary pilgrim gaining the summit of a rock helped up by an angel in resplendent robes, and surrounded by a host of cherub-like figures. The colour of the latter is overpowering, and there is a want of harmony despite merit of conception. Anderson Hague's "Winter Fuel" (37) for its tone and colour is worthy of note, and we must also mention J. W. Godward's refined "Portrait of a Lady" (26), Ernest Parton's large "Lady of the Lake," a feebly-handled centre upright landscape, with a birch tree in foreground, among the more conspicuous works in this room. In the balcony are to be seen some very delicate portrait studies in pencil and chalk by the Marchioness of Granby, Mrs. Norman Grosvenor, and several water-colour drawings by Leonard Lewis, Miss Nora Davison, Philip Norman, Bernard F. Gribble, Miss Charlotte Spiers, A. B. Donaldson, Count Nicolas Androutzos, Mrs. F. Harvey Moore, and many more. In the central hall there is to be seen some sculpture and interesting goldsmith's work by Countess Feodore Gleichen, Miss Elinor Hallé, Alexander Fisher, Mr. and Mrs. Gaskin, and others, which we have no space to notice.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AN ordinary meeting of the Institute was held on Monday evening, Mr. E. A. Grüning, Vice-President, in the chair. On the motion of the CHAIRMAN, seconded by Mr. ALEXANDER GRAHAM, F.S.A., hon. sec., the resolution rescinding for one year the operation of by-law 26 (by which by-law the President is ineligible for re-election to the chair after having served for two successive years) was unanimously confirmed. Mr. W. J. LOCKE, secretary, announced that an examination for the office of building surveyor had been held, at which three candidates had presented themselves, one of whom, Mr. James Edwin Webb, of Balfour-road, Nottingham, was successful. An examination had also been held for the office of district surveyor, and, among three candidates, two were successful in passing—viz., Sidney Joseph Halse, of Hestercombe-avenue, Fulham, and Frank Sizer Capon, Northanger-road, Streatham Common.

THE CLASSIFICATION OF ROMANESQUE ARCHITECTURE.

Mr. FRANCIS BOND, M.A., Hon. Associate, read a paper on this subject, illustrated by about 130

lantern-slides, many of them specially taken by the lecturer, and others reproduced from drawings and engravings.

The subject of the classification of the Romanesque styles was, the author remarked, a large one. Classifications already existed—those of De Caumont, Quicherot, Viollet-le-Duc, and particularly Anthony Saint-Paul, were referred to, but they helped one but but forward. It remained to consider whether a wider basis of classification could not be found, one resting on the main facts of plan and structure.

WHAT WAS THE AIM OF THE OLD CHURCH BUILDERS?

First of all, what was the one thing that the old builders—whatever the schools they belonged to—were trying to do? With the exception of a certain number of them who were attempting to solve the church-building problem by following the type of St. Stefano Rotondo at Rome, or of St. Vitale at Ravenna, and whose furthest outposts, with the exception of the churches of the Knights Templars and the Knights Hospitallers, are to be found in the churches of Aix-la-Chapelle, Otmarshausen, and Germigny-des-Près, all the builders of Western Europe, from the ninth century, when Romanesque architecture commenced, to the twelfth century, when it was superseded by Gothic, were engrossed with one supreme problem.

HOW TO VAULT A BASILICA.

This was the master-problem of the builders of the Middle Ages from the end of the ninth to the middle of the twelfth century. The amount of engineering skill, the ingenuity, and the variety of the solutions proposed were astonishing. They seemed never to have had their full due. Gothic architecture got nearly all the credit. As a matter of fact, every single one of the main difficulties inherent in the task had been effectually met—and met in more than one way—before the first Gothic architect ever handled a trowel. Early in the 12th century, or before, at least five complete solutions had been arrived at, as may be seen at Le Puy, Tournai, Chury, Speyer, and Durham. The problem how to vault a basilica meant—(1) that there were to be aisles as well as a high nave; (2) that some form of vault construction was to be devised; (3) that since a vault of stone was heavy, piers must be substituted for graceful, but weak, classical columns; (4) that the thrusts of the high vault of the nave must be stopped in some way by abutment in or above the aisles; (5) that top-lighting by clerestory windows was to be retained; (6) that the outer surface of the wall must be protected from the weather.

A SIMPLE SOLUTION OF THE PROBLEM.

In most cases one or more of these conditions were evaded. One school, the most ancient of all, which held the whole of the field till the 9th century—simplified the problem by omitting the vault and retaining the colonnade.

A SECOND SOLUTION.

—also very incomplete—was to omit the aisles; to build a hall-church roofed with a tunnel vault. This simplified the question of supports, for it substituted solid walls for hollow arches, any amount of clerestory light could be introduced, and the walls could be thickened to any extent to provide continuous abutment to the thrust of the great tunnel vault. Everywhere it was the natural and proper solution where only a small church was required, but it was employed in Provence even in churches of cathedral rank.

A THIRD METHOD.

represented by the school of Périgueux, also removes the difficulties of supports, abutment, and top-lighting by eliminating the aisles. It presents us with another variety of hall-church, roofed, not with a tunnel, but a row of domes, and it is to be noted that the corners of each square bay of the nave are filled in with pendentives to support the dome.

THE NEXT METHOD.

is found only in the church of Loches, near Tours. Originally there was a low tunnel-vaulted nave, without aisles, of the 11th century. But about 1160 the eastern portions of the nave were pulled down, two square bays were formed, and on these bays two spires were erected.

A FIFTH SOLUTION.

In two churches of the first rank a row of domes was employed to roof an aisled nave. The

typical example of this is the wonderful cathedral

on each rising up to the apex of the arch and then
lintels of basalt were laid longitudinally—i.e.,
treated this curious phase of architectural history

We next come to a whole series of attempts to
solve the problem by covering an aisled nave with
with what is called a tunnel, waggon, barrel, or
Syria, the nave was spanned by stout arches,
walls, instead of carrying lintels, as in Syria,
carries a short tunnel set transversely.

We now come to the vast number of churches
in which the tunnel-vault of the nave was placed
tunnels may be divided into those (a)
where the tunnel rests on a pier-archade; (b)
where the tunnel rests on the arches of an upper-
vaulted aisle; (c) where the tunnel rests on a
wall pierced with clerestory windows.

Such interiors as that of Notre Dame de Poitiers
especially, the expedient was hit upon of build-
ing two aisles instead of one, both vaulted; then
the tunnel could spring at a much higher level.
Moreover, some of the gloom of the Poitevin type
of nave could be dispelled by piercing the back
wall of the new upper aisle with windows.

The chief difficulty of the one untitled con-
dition in the problem—the provision of clerestory
light was taken by piercing the base of the
tunnel itself with clerestory windows. The final
important change was to pierce the
windows wholly in a clerestory wall. This latter
in use in tunnel-vaulted churches in the 11th
century at Saint-Guilhem-du-Désert in the
Southern Pyrenees, and in Burgundy on a small
scale at Saint-Benoît-sur-Loire (commenced 1062),
and on a gigantic scale at Cluny (commenced
1089). This solution, which was destined, within
a generation or two, to culminate in the Gothic
architecture of Saint-Denis (1140), consists in
covering a nave with unribbed groined vaults.

was to substitute the ribbed for the ground
vault, to dispose the vaulting compartments of
the nave in oblongs, to facilitate the vaulting of
these oblongs by the application of the pointed
arch, and to transmit the thrusts of the high
vaults by means of flying buttresses to the
buttresses of the aisle walls. To this, Gothic
architecture added three developments: (1) It
weighted the buttresses with pinnacles. (2) To
a large extent it replaced the masonry of the
walls by glass. (3) In Durham nave, the
Abbaye-aux-Dames, and elsewhere, abutment
disposed beneath the aisle roof. In Gothic the
flying buttresses are placed above the aisle roof.

The method, which was the first method, but is built as if a vault were
intended. The home of this unworthy con-
struction is Normandy. Of the above solutions
of the vaulting problem, the third, the employ-
ment of

is by itself a full and satisfactory criterion. It
occurs nowhere except in a group of some thirty-
five churches in the district of Périgueux, with
such "outliers" as Fontevault and Angoulême.
No. 2, the hall-church, is most common in the
south-west and south of France, from Poitou to
longitudinal tunnel or with groined or ribbed
vaults. No. 8, where a tunnel vault rests directly
on the pier arches, occupies much the same
districts as No. 2. No. 9, where the tunnel rests
on the arches of an upper aisle, extends from
Clermont-Ferrand, in Auvergne, to the south-
west as far as Conques and Toulouse. No. 10A,
where the tunnel is combined with a triforium
or clerestory, is the final development reached in
Burgundy. No. 10B, where there is tunnel and
clerestory, but no triforium, is the solution of
Provence and of Piedmont. No. 12, the ribbed
vault, occurs sporadically, except in Germany
and Lombardy, where it is characteristic. No. 13,
the unvaulted nave, was nearly universal in
Normandy and England till the twelfth century
was well advanced. The author went on to con-
sider how these eight divisions will stand other
tests. A very important test is afforded by

especially of its eastern limb. It must suffice to
trace four main types of choir-plan. The first is
that with three parallel eastern apses, of which
there is a variant with square-ended aisles, as at
Clerisy-la-Forêt, and another with aisles square
externally and semicircular internally, as at
Romsey. This is pre-eminently the plan where
the unvaulted nave prevails—viz., Normandy.
It is frequent in Lombardy and in those Pro-
vencal churches that have aisles. A second plan
is that of the ambulatory and "chevet." It is
rare in Germany, Lombardy, and Provence, and
nonexistent in Normandy (excluding England).
The plans alone, apart from other considerations,
would entitle Germany to rank as a distinct
architectural province. In Provence the aisled
churches generally have three parallel eastern
apses. The divisions may be tested again by the
treatment of the central tower—(1) its vaulting;
(2) its shape, whether square or octagonal. The
Romanesque builders had

at their disposal in the 11th century, the groined
vault, the tunnel vault, and the dome. The most
difficult problem they had to cope with in vault-
ing was the question of putting a vault over the
crossing, resting not on walls, but on four un-
buttressed legs. They had hardly dared yet to
put on a groined vault over their naves, fearing
its concentrated thrust. Their favourite tunnel
vault could not be used at all at the crossing, for
it needed solid walls for its support. They had
perforce, therefore, to use the dome, in all cases,
except in the Périgueux district, resting on
squinches. Secondly, they had to stop the thrusts
of this dome by carrying up a central tower to
weight the arches or walling on which the dome
rested. As regards the shape of this tower, they
had two alternatives. The crossing was square,
and so the tower over it might be square, as was
the great central tower of Cluny and that at
Tournay. But the squinches reduced the square
of the crossing to an octagon, and as the tower
rested directly on the octagon, and not on the
square, it was more natural that the tower also
should be octagonal. Hence the magnificent
series of octagonal central towers in Burgundy and
Southern France, Germany, and Lombardy, cul-
minating at Mayence and Saint-Sernin, Toulouse.
In Normandy and England, on the other hand,
the builders hardly ever dared to vault their
naves at that early date, and never the crossing.
And there being no dome in an Anglo-Norman
tower it is square. Another test is afforded by

(1) The glorification of the tower reaches its
highest pitch in Germany. Six towers are found
at Speyer, Worms, and Laach, seven at Lim-
burg. (2) In Burgundy the magnificent tower
group of Cluny seems to have remained without a
rival. Its daughter churches were satisfied with
a triplet; an octagonal central tower and two
square western towers was the favourite arrange-
ment. The towers have several stages, similar in
form. (3) In Normandy also the triplet was the
favourite, but the central tower was square, and
not domed internally. (4) In Poitou the charac-
teristic is the conical spire, "en pomme de pin,"

which often surmounts the tower. (5) In the
Périgordian region is seen the same conical spire,
together with the characteristic cupolas. (6) In
Provence a simple square tower is common,
with a very low spire. But some have central
octagons. (7) In Auvergne a specially charac-
teristic arrangement is that of a square western
tower in the centre of the façade and a central
octagon. (8) In Northern Italy the campanile
type greatly predominates, and where the massive
Romanesque tower is found, it is usually divided
(in campanile fashion) into very numerous stages.
Nowhere, except in the Como churches, does the
campanile form part of the structure of the
church; often it is quite detached.

He had thus discriminated the following eight
schools of Romanesque:—I., the Périgordian;
II., the Poitevin; III., the Provençal; IV., the
Auvergne; V., the Burgundian; VI., the
Norman; VII., the German; VIII., the Lom-
bardic. As regards the above classification, one
word of caution is necessary. In speaking—e.g.,
of the style or school of Auvergne—the author
said he did not mean either that all the churches
in Auvergne were built in this style, or that there
were no such churches outside Auvergne, but
merely that such churches were more common in
Auvergne than elsewhere, and may therefore for
convenience be described as belonging to the style
or school of Auvergne. Also that those features
described as characteristic were not invariably
found; they were merely those which occurred
most frequently.

One is tempted to try to work out the relations
to one another of the different schools. Certain
resemblances are patent. The superposed aisles
link the style of Lombardy to that of Auvergne;
German Romanesque is connected with Lombardic
on the one hand, and with Norman on the other.
But a much more exhaustive classification is
necessary before any results of lasting value are
likely to be obtained. Still stronger is the
temptation to inquire into the origins of all the
Romanesque styles; whether they are derivatives,
as some have held, from Provence, or, as others
have held, from Lombardy. Such architectural
pedigrees are not, as a rule, trustworthy. And
there always remains an alternative hypothesis,
which seems to have within it much of truth—
viz., that the styles were none of them mainly
derivative, but that the same problem was engaging
all the different regions more or less simultane-
ously; that the builders of each region were
solving it, with some little light, indeed, from
their neighbours, but mainly independently, by
empirical experiments of their own, aided by the
survival here and there of traditions of Roman
construction, and by the study of local Roman
monuments. Another caution requisite is that
the classification does not cover the whole ground.
This is necessarily so. Between each region and
the next there was always a debatable ground,
where two or more styles would be in simultane-
ous use. Indeed, a "pure" region would be
the exception; the greater part of the area of any
one country would employ mixtures of style.
England is an instance. It had always been
customary, the author believed, to regard the
Romanesque of England and Normandy as one.
The Romanesque of Normandy, however, seemed
to be a "pure" style, and that of England a
"mixed" style. While by far the most im-
portant factor is the influence of such pre-Conquest
churches as Bernay, Jumièges, and the Abbaye-
aux-Hommes, we must also attribute some degree
of importance, at any rate in the planning, to
the highly-developed Romanesque of Auvergne
and Burgundy.

A short discussion followed, in which Lieut.-
Col. LENOX PRENDERGAST and Mr. R. PHENE
SPIERS, F.S.A., took part, and a cordial vote of
thanks was passed to Mr. Bond.

THE ARCHITECTURAL ASSOCIATION.

THE fortnightly meeting of the Architectural
Association was held at 9, Conduit-street,
W., on Friday evening, the President, Mr.
W. H. Seth-Smith, F.R.I.B.A., in the chair.
Mr. H. de C. Browning having been elected
a member, a vote of thanks was accorded
to Mr. Andrew Oliver for the gift of some
lantern-slides of Hatfield House and Church.
Messrs. W. A. Jeckells, H. G. Collins, C. W.
Baumant, and A. A. Carter were appointed

scrutineers for the ensuing election of officers and council. The President gave notice of a special general meeting of members, to be held on Friday, May 10th, for the consideration of a suggested new by-law, limiting the terms of office of the holder of the post of hon. treasurer, h.c.n. librarian, and hon. secretaries to periods of five, two, and four years respectively, and also for authorising the appointment of four trustees, in whose names the funds of the Association should be invested. The President announced that the committee had decided not to make any strong representations to the Royal Institute of British Architects in reference to the limitation of the competition for the Queen Victoria Memorial, but to instruct the hon. secretaries to write a letter in general terms, expressing a hope that the basis of competition might yet be widened.

THE EIGHTEENTH-CENTURY ARCHITECTURE OF BATH.

A paper on this subject was then read by Mr. M. A. GREEN, and was illustrated by numerous lantern slides. The author remarked that while he was mainly concerned with the period between the years 1727, when the elder Wood came to Bath, and 1781, the date of the death of his son, it was necessary to review the work which preceded and which followed theirs, and therefore he would take a survey of the principal buildings erected from the very beginning of the 18th century to its close, including the names of those who were sometimes competitors with, sometimes followers of, these two men. Mr. Green referred to Dr. Johnson's view of the city of Bath, published in the year 1752. Here the city could be seen in delightful simplicity, surrounded by its walls, of which we had now few traces except in name; a piece in the Upper Borough walls, and the Eastgate, with a portion till lately adjoining, being the only relics above ground, unless there were remains built into any of the houses. The size of the city at this time was about 1,200 ft. from east to west and 1,150 ft. from north to south. By 1590 the city was much enlarged, and its character, created by Queen Elizabeth, extended from the bridge over the Avon at the bottom of Southgate-street along the middle of the river as far as the narrow vale called Kingsmead, and thence to the highway leading from Weston to Walcot, and so to the Vine Yards, or Vine Yards, thence by Walcot churchyard, and so along the middle of the river back to the old bridge. In 1702 and 1703 Queen Anne and her Royal Consort, the Prince of Denmark, came to Bath, and thereupon many people of rank and fortune came also. In the following year Dr. Oliver began to write on the Bath waters, and in consequence the corporation improved their surroundings somewhat. Mr. Thomas Greenaway, one of the Freestone Masons of the city, constructed a bath in one of the rooms at the foot of Beechen Cliff. About this time Parliament was applied to for power to amend the principal roads leading to Bath, to pave, cleanse, and light the streets, lanes, &c., of the town. But little attention was paid to the wants of the company that assembled at Bath until Harrison's rooms were built in 1708. In spite of a reaction on the part of the citizens, because of the increase in the numbers of the houses, Mr. George Trim, whose mother was a near relative of Inigo Jones, began in 1707 to build the street named after him at the north-west corner of the city. On the other side and farther down the street are, the lecturer continued, some houses built in 1737 and restored in 1897. The houses about this period are characterised by the large windows with projecting wave mouldings round them. Of such is the Saracen's Head in Broad-street, with initials W. D. and date 1713 upon it. The oldest house in this street is No. 38, date 1709, and almost identical with it in elevation is one in Chapel-court. These are by far the best of the older houses in the city, and their dignity is probably due to the very large window spaces and the number of openings. In the St. Catharine's valley there are entrance doors of the same type, with unusually wide and massive bolection mouldings. In 1716, on the site of the new bowling-green, a row of houses was begun, and was called Green-street. It is one of the most picturesque parts of Bath now remaining. The detail at times shows a Free Classic treatment, and there seems to have been a distaste for bare wall space which has led to a full enrichment of these small façades. The sashes are also divided into small panes, with wide glazing bars. The Bunch of Grapes in Westgate-street has a fine plaster ceiling dating about 1680-1700, but the front facing the street was rebuilt, together

with other houses in the neighbourhood, about twenty years later — i.e., just before Wood began his work. In the adjoining house the Orders are used—the Ionic and Corinthian remaining on the first and second floors, the Doric having been most likely used on the ground floor; while Weymouth House was built in 1720 for a Dr. Bellinson, and was designed by William Killigrew. An almost exact copy of Weymouth House is to be found in No. 3, St. James-street; but the consoles which support the pediment over the door are here carved into griffins, which were never executed in the former. Nearly opposite to Weymouth House is a curiously rusticated building. The Orders are used, as seen frequently, to make a central feature, but the treatment is not good. The best rain-water head in Bath came from the houses pulled down a few years since on the south side of Orange-grove, and has a date 1703 or 1709 scratched upon it faintly. Old Widcombe Manor was built for Mr. Philip Bennett's son in 1727. The builder was likely to have been the Thomas Greenaway who put up Beau Nash's house in St. John's-court, now the theatre. The great feature of this house is the treatment of the Order which embraces two stories. The garden house here is a refined piece of work. From a comparison of this building with the Palladian Bridge in Prior Park, both seem to be by the same hand, and if the Palladian Bridge was designed by Wood, then this little house was also. The building called the Garrick's Head, and now known as the Theatre, was at one time the residence of Richard ("Beau") Nash, M.C., of Bath. This house, situated in what was known then as St. John's-court, was built in 1720 by the Thomas Greenaway above mentioned. The treatment of the windows of the second floor in connection with the cornice is very unconventional. The dies at the angles are now the only parts remaining to show the existence of a former balustrade. On the other side of the theatre are Beaufort Buildings, which Wood says are the practical architecture of a Mr. John Strahan. Londonderry House and Kingsmead-square were also built by John Strahan. In 1723 another Act was obtained for Bath relative to lighting, cleansing, and other things, and to make the former Act more effectual; and "in 1724," says Wood, "a subscription was opened by Mr. John Hobbs, a deal merchant of Bristol, for carrying the navigation of the river into execution, so that when I found the work was likely to go on, I began to turn my thoughts towards the improvement of the city by building; and for this purpose I procured a plan of the town, which was sent me into Yorkshire in the summer of the year 1725, where I, at my leisure hours, formed one design for the ground at the north-west corner of the city and another for the land on the north-east side of the town and river." Little is known of John Wood's early life. He was born in 1704, and it is probable that he was introduced to Bath through the influence of Ralph Allen. He was thus at this time but one-and-twenty years of age. "After my return to London," he continues, "I imparted my first to design to Mr. Gay, an eminent surgeon, in Hatton-garden, and proprietor of the land; and our first conference was upon the last day of December, 1725. On March 31 following I communicated my second design to the Earl of Essex, to whom the land on which it was proposed to be executed then belonged; and in each design I proposed to make a grand place of assembly to be called the Royal Forum of Bath; another place, no less magnificent, for the exhibition of sports, to be called the Grand Circus; and a third place, of equal state with either of the former, for the practice of medicinal exercises, to be called the Imperial Gymnasium of the City." In May, 1726, during the consideration of the drawings, a great fire broke out in Horse (or South-gate) street, and the larger houses that took their place were the last built before 1727. In November of 1726 Wood fixed his preliminary articles with Mr. Gay, who then empowered him to engage with anybody that he could bring into the scheme for the building of a street 1,025 ft. long north to south, by 50 ft. east to west, for a way to the grand part of the design. This was Berton-street; but at first it did not go forward, and Wood, having two other schemes on hand, and finding it necessary to have good workmen, determined to become his own contractor. The first scheme was the building of a court of houses for his Grace James Duke of Chandos, and the second was a canal between Bath and Bristol. For the canal he obtained men

that had been on the Chelsea Waterworks; and he says "that until that time the real use of the spade was unknown in and about the city." "I likewise," he says, "provided masons in Yorkshire, carpenters, joiners, and plasterers in London and other places, and from time to time sent such as were necessary down to Bath to carry on the building that I had undertaken; and it was then, and not till then, that the lever, the pulley, and the windlass were introduced among the artificers in the upper part of Somersetshire, before which time the masons made use of no other method to hoist up their heavy stones than that of dragging them up with small ropes against the sides of a ladder." At that time he was asked to prepare plans for dwelling-houses, an assembly-house, and a general hospital, and in 1727 he left London altogether, and followed his workmen to Bath. In 1727 Chapel-court was begun. The house to the left is that in which Horace Walpole lived in 1765, and the wing to the right St. John's Hospital or the Blue Arms, designed by Wood in 1728. In the former is a characteristic fireplace of the period, with fine castings on the grate. The death of King George I., however, causing Mr. Gay to fall from his bargain, and the Corporation making light of Wood's schemes, the latter dropped his agency, became absolutely his own master, and took ground from Mr. Gay for the building of Queen's-square, so named in honour of Queen Caroline. At this time (1728) he was building an addition to the north side of R. Allen's town house in Lilliputally. There was thus a basement story, and, as in Queen-square and later on by his son in the Crescent, an Order rising through the two stories over with one crowning cornice, and he says that it was "a sample of the greatest magnificence that was ever proposed" by him for the city houses. The house now presents only two sides, north and south, and even so the south wing has been entirely severed from the main building. Inside there appears to be nothing of note remaining. It was here that Allan kept his clerks, who were engaged in the business of the cross-posts. After Allen's death, in 1764, the house was neglected, although retained for some 20 years afterwards for postal business. In 1730 the houses of the Duke of Chandos, called Chandos Court, were being erected. They were to form three sides of a square with a garden in the middle. The strictly symmetrical elevation is a good feature in this design, which is crowned with a fine pillowed frieze and cornice. Chandos House had been rebuilt in 1727 for the Duke.

(To be continued.)

SIR JOHN SIBBALD ON ASYLUM CONSTRUCTION.

AT the last meeting of the Edinburgh Architectural Association—Mr. Henry F. Kerr presiding—Sir John Sibbald read a paper on the "Plans of Asylums for the Insane Poor," looked at from the medical and administrative points of view. He said that asylums for the insane had now become so prominent among our national and municipal institutions that it was of great public importance that correct views should be held as to the kind of building which was best suited for them. It was helpful to know something of the grounds on which persons familiar with the treatment of the insane had arrived at their present opinions, and this knowledge could be best obtained by taking a general survey of the changes that had occurred in the character of asylum buildings during what might be called the modern epoch. Sir John briefly referred to the kind of buildings in which the insane were lodged previous to the 19th century, and mentioned as illustrations the cells attached to the Charity Workhouse and the old Royal Infirmary. The duty of erecting asylums at the public expense was not seriously recognised in this country till the middle of last century, when the English Lunacy Act of 1845 and the Scottish Lunacy Act of 1857 laid this duty upon localities, and conferred on them powers for obtaining the necessary funds. To illustrate the growth of opinion in regard to asylums since that time, Sir John first referred to the plans of the Derby County Asylum, which was opened in 1851. He then drew attention to the plans of the London County Council's Asylum at Bexley, which was opened in 1898, and referred to the improvements which showed themselves in the more recent plan. Among these it was noticed

of the various forms of the building, and the various plans of cells in particular, as they are arranged in plan, and that they are not specially designed for the patients, but are, in fact, according to the requirements of their different bodily and mental conditions, those requiring hospital treatment, for example, being placed in wards arranged like those of an hospital, and those in good bodily health, and whose mental condition does not require them to be housed differently from sane persons, being placed in wards of a more home-like character. He pointed out that this type of asylum, which he called the aggregated pavilion type, differed from the next type to which he drew attention, chiefly by the several wards being connected to other wards either by being portions of the same building or by the existence of corridors of communication. The type in which the wards consist of separate and independent buildings he called the segregated pavilion or village type; and he illustrated it by reference to the plans of the Prussian asylum at Alt-Schulitz and of other more recently erected asylums of the same type. He gave a number of reasons which, in his opinion, justified a preference for the segregated pavilion or village type. Among these he mentioned the importance of making the buildings and everything else about an asylum as likely as possible to have a beneficial influence on the minds of the patients; and he showed that it was difficult to prevent a large building which was neither a palace nor a manufactory from being both inside and outside gloomy and prison-like. He was also of opinion that where each ward was a completely independent building its arrangements could be made more efficient both from the general points of view of cheerfulness and health and from the special point of view of the adaptation of each ward to its own purposes. He thought the objections to the segregated buildings that had been raised from the administrative point of view were sufficiently met by the fact that they received no support from those who have had the actual administration of a village asylum. He alluded to the fact that it was proposed to erect the new Edinburgh Asylum on the village type. Sir John drew attention to the difference in practice north and south of the Tweed in regard to the courts surrounded by high walls which were at one time attached to asylums as well as prisons, and which are generally known as airing courts. In Scotland the use of these airing courts had fallen into disfavour as early as 1869, and in that year the walls were removed, and the airing-courts abolished in one asylum. Since then the walls had either been removed or lowered so much as to cease to be restrictive, in nearly every Scottish asylum; and in no Scottish asylum erected since 1869 had any airing-courts been provided. In English asylums, on the contrary, airing-courts were still in general use, and he quoted from the English Commissioners' Reports to show that in at least three of the London County Asylums from one-fourth to one-third of the inmates never took exercise beyond the airing-courts. He strongly advocated the abolition of these airing-courts. Another point to which he drew attention was a recent movement to which he gave his support—for the diminution of the practice of locking up in single rooms during night-time the noisy, the excited, and others of the more troublesome patients, and he spoke strongly in favour of the great increase in recent years both in the amount and the efficiency of the night-nursing given to such patients; and he showed how such a change in the mode of treating them should affect the plans of future asylums.

THE BUILDING TRADES EXHIBITION.

CONSIDERABLE interest has been shown by the Profession in this exhibition, and several special visits have been made and are about to take place. The Institute of Builders paid a visit to the Hall last Friday; on Saturday last the Architectural Association made a tour of inspection, and was interested in many of the exhibits in the Main Hall and the Fire-Prevention Section; on last Tuesday afternoon the British Fire-Prevention Committee invited a large number of architects and scientific men to visit the Fire-Prevention Section organised by the committee. Sir John Taylor, K.C.B., Mr. Edwin O. Sachs, the chairman of the committee,

Mr. F. Hammond, F.R.I.B.A., Chairman of the Exhibition Sub-Committee, were present, and received the company, and after a few preliminary speeches, in which Sir John Taylor and Mr. Edwin O. Sachs referred to the inception and organisation of this particular section of the Exhibition, the visitors inspected various stands and exhibits. Experimental tests were made by several exhibitors. The British Luxfer Prism Syndicate showed the effect of gas flames on a plate of their electro-glazing; the Non-Flammable Wood Company demonstrated the resistance of textiles treated by their process to a gas-jet. The stands of Hobbs, Hart, and Co., Ltd., G. A. Williams and Son, the Crittall Manufacturing Co., Ltd., the New Expanded Metal Co., Ltd., the Columbian Fireproofing, F. McNeill and Co., Pilkington Bros., and others were inspected. The hope was expressed by one or two of the speakers that the Fire Prevention Exhibition might be made an annual exhibition.

Yesterday (Thursday) afternoon the members of the Society of Architects, headed by the President, Mr. Walter Emden, L.C.C., and the hon. sec., Mr. Ellis Marsland, visited the Hall.

We here resume notices of other exhibits which our space precluded last week, and we first notice the very interesting exhibit of James Woodward, Ltd., Swadlincote, near Burton-on-Trent, Row C., No. 79. All engineers, municipal and otherwise, and architects will find a great deal to inspect and interest them in this stand, besides the display of stoneware, drain-pipes, glazed bricks, firebricks, lavatories, closets, sinks, manhole chambers. We particularly draw attention to Ewing's "Xentric" shoulder for drain pipes, by which arrangement of the eccentric shoulder in the socket, the pipes are self-centring, all "play" and misfitting are avoided and an even joint is insured. A wider space and a thicker body of cement is obtained between spigot and socket, which renders the joint air and watertight. The roll of clay in the recess at end of socket fills up all space at the abutting ends of pipes, which gaskin sometimes leaves empty. The arrangement is exceedingly simple and effective. Woodward's double-seal pipes should be noticed for the superiority of joint it secures in waterlogged ground. The cement grout can be poured in through a hole on top of socket which fills up the annular space between the shoulders cast on the spigot-end. A band of clay is put round the spigot-end on a shoulder so that it is not washed out during laying. Another patent socket-joint speciality possesses all the advantages of the old Stanford joint with a specially thick fillet of cement round mouth of socket. The "Archer" improved patent jointed-pipes, Freeman's patent inspection-chamber, manholes, and half-channel bends in white enamelled glazed ware and in vitrified brown, "Anchor" brand, and the display of white, green, and salt-glazed enamelled bricks are well worth inspection for their qualities.

In our notice last week of the Veronese, Ltd., Row C (68), the manufacturers of the perfected "Gypsite," we omitted to mention the exhibits of the Cloisonné Glass Co., 66, Berners-street, Oxford-street, which are in the same pavilion. The new patent decorative material, both transparent and opaque, can be used for windows, frieze lights, fanlights, door panels, domes, screens, fascia panels, and wall decoration. The examples we inspected of both the translucent and opaque glass are very beautiful in design and colour. The decorative design in coloured glass is introduced between sheets of transparent and opaque glass, and produces very charming effects applicable for every kind of decoration. As a substitute for stained and painted glass, the Cloisonné glass has much in its favour, as the colour design shows both as a translucent medium and when only lighted on one side. The opaque glass makes a very pleasing decoration in wall and door panels, friezes, fascias, lettering, and for the decoration of cabinets. For memorial and church windows, restaurants, and public buildings, the cloisonné glass decoration will soon obtain a wide popularity. Its cost is very moderate, and varies from about 3s. to 4s. per square foot upwards. We recommend all architects and decorative artists to examine the specimens in this pavilion.

W. Höfer, 26A, Soho-square, W., has in Row C (64) a small stand full of very unique specimens of hammered ironwork of a high class, that deserve the attention of architects, decorators, electrical engineers, and others. We notice at this stall some very beautiful examples of candlesticks, a chandelier, a lectern, brackets

for electric lights, grilles, railings, staircase balustrades (one for a house in Park-lane), and other decorative metal-work, possessing much artistic spirit and freshness in design, that will repay a visit. The true and ancient spirit of hammered iron, brass, and copper is here presented to us in their application to modern buildings (ecclesiastical and domestic), and also to furniture. French art bronzes, by well-known artists in metal, and art castings in bronze, are to be seen at 26A, Soho-square. The finger-plates in beaten brass, and the very simple and artistic trays and inkstand in hammered iron deserve notice in this collection. A display of very artistic hand-made tiles will attract attention.

James Melling, Dashwood House, New Broad-street, E.C., has on view, in Row C, a very important novelty in the shape of radiators—the Dowsing radiator. These are luminous electric radiators which radiate intense heat into the room, but with this valuable reservation—that no combustion and injurious gases or fumes are given off, and that, therefore, they do not require a flue. The heat is available as soon as the current is turned on. The electricity is all turned to heat, and the effect is certainly that of the glow and light of sunshine itself. But the mode by which this is effected is worthy of notice. The radiators are exceedingly ornamental appliances, and consist in each case of a series of heat-lamps. In one of these radiators four heat-lamps are arranged in a fan-like or radiating form in an ornamental metal case or frame and patent coppered reflector, which is sufficient to warm rooms of about 12ft. square. One radiator shown is of square type, coppered all over except back. It has brass pillars and ornaments, and contains four luminous heat-lamps, two switches, and 3 yards of flexible wire. A four-lamp radiator consumes one unit of electricity per hour; but it may be turned down to one-half by the switches. These very attractive-looking electric-lamp radiators can be worked from any electric-supply main, if the heat-lamps are fitted for the voltage with proper-size wires. We recommend all who are interested in domestic heating to visit this stand. For halls, bedrooms, and wherever a portable radiator is required, this pure-air radiator ought to be used.

A. G. Thornton, of St. Mary's-street, Manchester, has an interesting exhibit at Stand 6, Row D, in the gallery, showing a most complete collection of the latest pattern English-made drawing and surveying instruments and materials, and several special lines in drawing and tracing paper and cloths.

On Tuesday the party of German clayworkers, who are on a visit to this country in connection with the Exhibition, travelled to Peterborough, where they were met by Mr. J. C. Hill, the managing director of the London Brick Co. After a visit to the Cathedral, to the restoration fund of which the German Society contributed ten guineas, the party were conducted over the works of the London Brick Co., and were evidently much interested in the inspection of the largest kiln in the world, which when filled holds 1½ million bricks. The visitors were afterwards entertained at lunch with the Corporation (the mayor, unfortunately, being unable to be present through indisposition), and proceeded on Wednesday to West Bromwich and Birmingham, returning to London on Thursday, and last night were entertained at the Hall by the Institute of Clayworkers, when the proceedings were of a most enthusiastic nature, the visitors expressing themselves as being delighted with their visit to this country and the Exhibition, whence they will, no doubt, take back many interesting ideas.

The vacancy on the Council of the Society of Architects, caused by the election of Mr. W. W. Thomas as a vice-president, has been filled by the appointment of Mr. F. W. Macey, of 1, Lombard-court, E.C.

The Exhibition of Works in Wood and Wood-Carvings which has been promoted by the Carpenters' and Joiners' Companies, and which will be held in the hall of the Joiners company, London Wall, will be open to the public free from June 5 to 18 inclusive. All exhibits must be delivered at Carpenters' Hall before Saturday, May 11.

Colonel A. J. Hepper has held an inquiry at Hastings into the application made by the town council to the Local Government Board for loans amounting in the aggregate to £17,084 for wood-paving, pulling down the town house, extending water-mains, and altering groyves.

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ILLUSTRATIONS.

DESIGN FOR MARKET HALL, WESLEYAN CENTENARY HALL.
—OLD COTTAGES AND FARMHOUSES IN KENT AND SUSSEX. HISTORIC METAL-
WORK.

Our Illustrations.

FEEDS CITY MARKET HALL.

The design for this building was chosen in an open competition by Mr. W. Emerson, President R.I.B.A. The site is trapezium shaped, but the market hall is a rectangle 245ft. by 102ft., the inequalities of the site being thrown into the surrounding streets. The plan of the market consists of a central hall, with a central nave, north and south, an aisle, rounded at the angles, inclosing the whole. The centre of the market will be occupied by stalls with a special centre, comprising clock-tower, &c. Small shops will surround the walls with a balcony level over same, having provision for additional shops. In all there will be 22 large shops, 36 smaller shops, exclusive of stalls, &c., and an important feature of the scheme will be a restaurant with hotel accommodation. The building will shortly be commenced, and is estimated to cost £83,500. Messrs. Leeming and Leeming are the architects.

WESLEYAN CENTENARY HALL COMPETITION.

This formed the subject of a limited competition for the new Wesleyan Centenary Hall in Bishopsgate-street, and the instructions to architects contained the following ideas of the trustees:—"The trustees do not wish to bind the competing architects to any particular scheme for the new building; but the arrangement they at present have in their mind is to arrange the ground-floor and basement for letting to a bank, insurance company, or other large corporation, with a separate and exclusive entrance. To allot the first and second floors to the church departments, and the remaining available space for rooms suitable for letting as offices, with rooms for caretaker at the top. To approach the church premises and the offices over by a staircase and lift at the opposite end of the façade to the bank entrance, this portion to have a secondary staircase. The entrance to the church department, and the elevation generally, to be sufficiently monumental in character to comply with the trust-deed already referred to. The front elevation to be designed as one building, and the materials to be Portland stone and granite." The instructions then set forth the detailed accommodation required. It will be seen that an endeavour was made to express outwardly the various portions of the building—namely, the great banking hall on the ground floor, the large committee-room on the first floor, extending the whole width of the façade and the three floors of offices over. This design illustrated was submitted by Messrs. Banister Fletcher and Sons. It was one of the two designs submitted by Mr. Aston Webb, A.R.A., the assessor, and was exhibited in last year's Academy.

HISTORIC METAL-WORK.

This sheet of prize drawings by Mr. J. T. Shaw, of Carlisle, was awarded a National Bronze

Medal at the last exhibition at Kensington. On each of his sketches are appended some descriptive notes of the subjects illustrated, so that nothing remains to be added here.

OLD COTTAGES AND FARMHOUSES IN KENT AND SUSSEX.

(WITH LITHOGRAPHIC ILLUSTRATIONS.)

THIS volume is the combined production of an accomplished amateur photographer, Mr. W. Galsworthy Davie (a pupil of the late William Butterfield), an artistic sketcher Mr. E. Guy Dawber, and an enthusiastic publisher Mr. B. T. Batsford. Their efforts have been well supplemented by a good printer and a tasteful binder.

Everybody admires picturesque cottage building, although in these days of speculative house-building and ground-rents, most people are obliged more or less to live in hideous tenements known largely as villadom, and too familiar to need description. The contrast, of which the artistic-minded are never forgetful, is made all the more evident by the possession of such a collection of camera studies as that which Mr. Davie has got together from the garden counties of Sussex and Kent. The more distinctly the difference thus realised is emphasised, however, the better, seeing that before an improvement in ordinary house-building can be effected there must be a healthy discontent with that which is now tolerated; while a more intimate acquaintance with more homely types should inspire an aspiration after the simply suitable and unpretentious dwelling in harmony with good taste and nature's surroundings. Such a result, nevertheless, is not to be obtained by merely imitating the proportions and unsophisticated character of historic cottages, or by copying the accidental peculiarities of such buildings, much of their charm coming by reason of their tumble-down eccentricities and quaintness of association. It is not, therefore, as a pattern book on the one hand, or as a mere archaeological record on the other, that Messrs. Davie and Dawber's volume ought primarily to be welcomed. Much could very properly be said from both these points of view; but to the architect these studies of vernacular building of wayside cottage architecture should present more practical considerations leading towards a recognition of the essentials of contemporary house-building adapted to the everyday habits and natural aspirations of those for whom such dwellings are intended.

To attempt a resuscitation of the type of such structures as those which have furnished the subjects for the majority of the illustrations in this book would end in failure; the incongruity of the task is at once self-evident, beautiful as many of these old cottages undoubtedly are. We all admire them; their old-world history endears them to every thoughtful mind, in spite of many a doubt as to sanitary requirements and other utilitarian considerations. To the lover of an English landscape, the cottages of Kent and Sussex need no recommendation, furnishing as they do the delightful form and colour of many a group, the fitting subject for many a sketch, and always redolent with a sense of home. Mr. Dawber is too practical an architect to expend his limited space on the merely ethical or poetic review of the evolution of cottage architecture; and he has done well in contenting himself with the more useful task of drawing attention to some of the typical features both of the design and construction of old cottages.

That which is the best adapted for its purpose is, generally speaking, the most beautiful, and it is the fitness of intention, as illustrated in the examples before us, which constitutes their chief lesson. They avoid pretensions to be anything but what they are, and there seems to be no effort in either their construction or ornamentation; being merely a simple handing on from generation to generation of well worn and tried tradition. As a rule, the fantastic or frivolous is entirely absent, while the local materials at hand are found almost invariably to have been employed. A defined style is thus obtained in different districts, the materials to a large extent influencing the character of the building. The entire Weald of Sussex and Kent at one time of day was covered by thick forests, and until their destruction for use in smelting the iron ore throughout the district, extending over some centuries, when most of the

houses were built of timber, only the more important ones being of stone or brick. Subsequently tile-hanging came largely into use, and the clayfields of Sussex afforded, as they do still, vast resources in this direction, while flints from the chalk-pits of the South Downs furnished an inexpensive material in the rough flint rubble walling so common throughout the southern counties. The remaining cottages of the older type, rarely less than 150 years old, are for the most part fragments of more important structures, utilised in after times for the rural population. The huts and shelters of the poor during the Middle Ages, built of perishable materials, or in a temporary manner, have long since gone, and in all probability they were comparatively few in number, and rude, comfortless structures, the better class of retainers being housed in the precincts of feudal strongholds.

The merit of these historic roadside cottages, apart from a historical consideration, or the mere charm both in colour and form which they add to the beauty of our villages and hamlets, is the simple traditional style in which they were constructed and planned. They display no restless and needless detail, and never drop to the level of fantastic vulgarity. The wholesome lesson taught by a study of these old buildings needs no elaboration, though architects frequently ignore the rule thus inculcated—viz., that our old vernacular buildings never pretended to be anything but what they are. They are homely and unpretending, and appropriate. With time, and somewhat according to the supply of local materials, the style through the counties referred to changed gradually; but fashion was unknown. All the same, individuality of treatment and variety of design is scarcely, if ever, found wanting. Types were adhered to, and the same dignity of breadth is generally to be noted, and at the same time each house seems to be impressed with variety and even freshness, though the identical detail may be familiar, and perfectly well known.

The timbered houses constitute the earlier examples, and belonged to the yeomen of the 16th century, built on a plan evolved from the mediæval common room in the centre, with offices and other apartments at each end, for the most part symmetrical in arrangement. At first a simple parallelogram with the ends more or less breaking forward and having an overhanging upper story. The moulded fascia and the shaped angle-posts in the better examples were often richly and charmingly detailed, adding vastly to the interest of the design, which always, whether plain or ornamented, obtained its effect from the shadow insured by the projecting upper stage, the dominating line invariably being a strongly marked horizontal one throughout the composition. The space between the vertical and naturally shaped timbering was filled with wattles, or later on with laths and chopped straw and clay, the surface being stuccoed flush with the framings which were generally of oak.

As settlements and shrinkings took place with age, and as tenons rotted or got drawn out, subsequent generations in a large number of instances either plastered over the whole of the outside to keep out the weather, or they employed tile hanging and sometimes used weather-boarding. The Seven Stars Inn at Robertsbridge, in the main street, is a good specimen, of which Mr. Galsworthy Davie gives a capital view. The old lines are preserved, but the house naturally looks modernised. The rooms in these old dwellings are seldom more than 8ft. high, and the bedroom accommodation is indifferent. The roofs, however, are lofty, and, if utilised, were used for mere store-places. Having no dormers or window openings, they present a broad and big expanse of tiling or thatch, which is essential to their artistic simplicity of effect. Herein consists the difficulty with which modern builders have to contend, seeing that nowadays every inch of covered-in space has to be made full use of, and ample windows are absolutely necessary. To anyone with an artistic sense this problem is a very real one, and while for architectural propriety a new house, with its new conditions, should not be based upon an attempt to copy an old one, a good architect realises the essential requirements of breadth and simplicity which he has learned by an acquaintance with old work. Mr. Guy Dawber discusses with taste and knowledge the features of these Sussex and Kent cottages, such as windows, oriels and doorways, barge-boards, drops and brackets. Quite one of the most important essentials of artistic building is furnished by the chimneys, and especially in

in Kent, as throughout other parts of England, to the top portions of chimneys being composed of Thatch, Horsham stone slates, and local-made tiles are commonly met with thicker scantlings, being much heavier in weight than modern tiles. The practice of using these was less regularly followed, while the texture and the finish of the materials was less uniform, thus the weathering varied and vegetated more freely, thus adding to the richness and delicate play of colour. The superiority of Breckia tiles for wear and exclusion of wet cannot be ignored by modern architects notwithstanding. Mr. Guy Dawber alludes to the plastered houses abounding in both counties, notably, for instance, at Canterbury. He might have supplemented his references to some detailed information as to stucco-work and rough-cast, even if he did not go deeply into the subject of modelled work and finishings. Had the old builders had Portland cement to use, how would they have used it? Artistically, no doubt. The question is common-place enough; but many a man who tries his hand at plastered house-works would be able to suggest answers. How to build a cottage for £100 is likely to remain unsolved unless plaster slabs or concrete squares are made to solve the problem. The cost of labour is the main difficulty. A few interior views and some plans would have greatly enhanced the book under notice. The volume cannot fail to take its place on its own merits, which need no further word from us, and it is equally well planned and pretty bound. We reproduce two of the plates from the original photographs, both the subjects being from Penshurst, Kent. Mr. Bastedo proposes to follow up this book with similar ones from other counties rich in old-time cottages.

THE SOCIETY OF ARCHITECTS' DINNER

THE annual dinner of the Society of Architects was held on Wednesday evening at the Prince's Restaurant, Piccadilly, and passed off most successfully, the attendance being the most numerous yet noted in the history of the Society. The chair was occupied by the President, Mr. T. Walter L. Emden, J.P., L.C.C., who was supported by Sir Wyke Bayliss, the Ven. Archdeacon Sinclair, Dean Vere, the Hon. W. F. W. Massey-Mainwaring, M.P., Mr. E. Goulding, M.P., Mr. H. S. Samuel, M.P., Mr. W. J. Bull, M.P., Mr. Edward Terry, Mr. E. A. Cornwall, L.C.C., Mr. J. E. Fuller, Mr. Lawrence Gomme, President of the Municipal Officers' Association; Mr. W. E. Riley, superintending architect L.C.C.; Mr. J. H. Hunt, Clerk of Westminster; Professor John Perry, F.R.S., President of the Institution of Mechanical Engineers; Mr. Chas. Wall, President of the Master Builders' Association; and a number of members of the Society and their friends. The toast of "The Houses of Parliament" was proposed by Mr. Silvanus Trevail, F.R.I.B.A., J.P., of Truro, vice-president of the Society. Mr. J. E. Fuller, M.P., Mr. Edward Terry, in giving the healths of "The Clergy," incidentally contradicted the prevalent but erroneous statement that he has been a churchwarden. Archdeacon Sinclair and Dean Vere responded, the former suggesting that the seven points to be borne in mind by an architect when designing a church should be fitness for Divine worship, consistency to the principles governing ecclesiastical design, regard for acoustics, sufficiency of exits and ventilation, and the use of the most suitable materials.

The toast of "The London Authorities," given by Mr. H. S. Samuel, M.P., and acknowledged by Messrs. E. A. Cornwall and J. Hunt, both of whom referred to the London Building Act of 1894 as, on the whole, a workable and satisfactory measure; but each illustrated an instance of its arbitrary and unreasonable operation in their own experiences. The speech of the evening for poetic thought and sustained allegory was made by Sir Wyke Bayliss, who, in proposing "The Society of Architects and Architecture," told the story of the castle haunted by the spirit of a lost maiden which appeared to every one who visited the ruin in the guise of the one nearest and dearest to that person. So the painter, whether in oils or water-colours, the etcher, the sculptor, and that great magician the architect, each aimed in the exercise of his own art at realising the vision of beauty which was to ennoble and enrich the world. The President, in replying, alluded to the Queen Victoria Memorial, and urged that it was not too late to throw open the competition to all the members of the profession practising in the United Kingdom and the Colonies. The concluding toast was "The Visitors," proposed by Mr. W. W. Thomas, of Liverpool, vice-president, and responded to by Mr. W. J. Bull, M.P.

THE QUEEN VICTORIA MEMORIAL.

ON the written requisition of twelve subscribing members so to do, under by-law 60, the Council of the Royal Institute of British Architects have summoned a special general meeting to be held on Monday next, the 29th inst., at 8 p.m., to consider various resolutions as under, submitted by Mr. Wm. Woodward [A.]—

1. That in the opinion of this meeting the proposed National Memorial to Queen Victoria should be open to the competition of all British—including of course Colonial—architects, sculptors, and artists.
2. That the first designs should be in the hands of the committee at the date already fixed—viz., the end of June next—and that from those designs six should be selected, the authors of which should be engaged to perfect their schemes, and submit them at a date to be decided upon by the committee.
3. That the author of the design selected from the six should be employed to carry out the work in collaboration with the sculptor, or sculptors, whom the committee may designate.
4. That in the event of the Memorial being thrown open to general competition, as above suggested, the information furnished to the five architects already appointed, for their guidance in the designs, be immediately made public.
5. That the whole of the preliminary designs, as well as the subsequent perfected designs, be publicly exhibited.
6. That these resolutions be at once transmitted to the Viscount Escher, with a request that they be laid before His Majesty the King.

The Speaker of the House of Commons unveiled, on Monday, in Committee-room No. 14 of the House, the bronze bust of the late Sir John Mowbray, M.P. for Oxford University. The bust is placed behind and over the chair. Mr. Conrad Dressler was the sculptor.

The new pavilions at the fever hospital, Blackburn, are being warmed and ventilated by Shorland's double-fronted patent Manchester stoves, with ornamental tiled sides, and with descending smoke-flues, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

The two decorative panels necessary to complete the series in the walls of the banquetting hall of the City Chambers, Glasgow, were unveiled on Friday. One of the pictures is the work of Mr. E. A. Walton. It is a representation of Glasgow Fair in the 15th century. The other picture is from the brush of Mr. John Lavery, who has selected as his subject a scene in the shipbuilding industry. The other panels—there are four in all—which had been unveiled on a previous occasion, are productions by Mr. Henry and Mr. Roche.

The building of the new church of St. Paul, Plumstead Marshes, has been commenced, the foundation-stone having been recently laid. The designs are by Messrs. C. A. and W. Bissett Smith, and show a Gothic building to be erected in red brick with stone piers and dressings. The church will ultimately accommodate 625 persons, but only the chancel and a portion of the nave and aisles is now being built, at a cost of £1,700.

BOOKS RECEIVED.

Lime, Mortar, and Cement, by W. J. Dibdin, Fellow and Member of the Council and Inst. of Chemistry, F.C.S., F.S.I., late chemist to the L.C.C., &c. (London: The Sanitary Publishing Company, Ltd., Fetter-lane.)—This little volume of the series of handbooks published by this company deals in a practical and concise form with the character and chemical composition of the various materials used in making mortars and cements, and the results of their chemical analyses. Various limes are described, and the author points out methods of detecting improper ingredients, and of writing a proper specification for the supply of lime. The following provision may be usefully quoted, after providing that each parcel is to be sampled on delivery, and examined by the purchaser. The third clause provides: "The lime is to be clean, well burnt, hand-picked lime, free from dust, coke, and clinker. The price quoted by the tenderer is to be for lime containing 95 per cent. of actual caustic lime (CaO). The purchaser may reject any parcel of lime containing less than 85 per cent. of actual caustic lime; but may, if he thinks fit, accept the whole or any part of such parcel." The pages are illustrated by photo-blocks and diagrams. The chapters on clay, sand and its substitutes, mortar and cement, setting of mortar and cements, rough technical tests, strength of brickwork, referring to the experiments of the R.I.B.A., Concrete, &c., will be found to contain very useful observations, analyses, and results compiled largely from leading authorities. The theories of setting of mortar and cement are discussed, and some useful suggestions made. The chemical and physical properties are ably summarised, and the rough technical tests of mortar will be found of service to practical men. The author gives the researches of his then colleague, Mr. John Grant, on the testing and use of Portland cement; also the report of Messrs. Stanger and Blount to the London Chamber of Commerce; also the valuable experiments and specifications of the late Mr. Faija, and other authorities. Mr. Dibdin's work will be found to be a valuable condensation of recent researches and experiments. Artificial stone and asphalt are also discussed in the two last chapters.

CHIPS.

For some time the municipal offices used by the Harrogate Corporation, situate over the Victoria Baths, have been inadequate for the growing requirements of the borough, and since the borough boundaries have been enlarged this has become more apparent. The need for a town-hall was recognised some years ago, and for the purpose an excellent site in the centre of the town, Victoria-avenue, was secured. Quite recently, however, it was decided to convert the old Town-hall Theatre into municipal offices. This resolution has been rescinded, and on Monday the corporation appointed a committee to visit the town-halls in other boroughs, including Dewsbury, Batley, and Halifax, and report back, and that afterwards competitive plans be invited for the erection of a town-hall on the Victoria-avenue site.

Mr. H. Percy Boulnois, M.I.C.E., an inspector under the Local Government Board, has held an inquiry at Rochford, Essex, into the proposal of the rural district council to borrow £25,000 for works of water supply for Hadleigh, Hawkwell, Hockley, Rayleigh, Rochford, and South Benfleet.

The oak panelling which has just been placed in the chancel of St. John the Evangelist's Church, Upper Hopton, Mirfield, by the congregation, has been dedicated by the vicar. The work has been executed from drawings made by Mr. J. Eadie Reid, of London.

Messrs. R. Dempster and Son, Ltd., Elland, are executing extensive alterations and improvements at the Heckmondwike Gasworks. Seventy-two ordinary hand-charging retorts are being taken out, and 96 others on the inclined retort system are being erected. The improvements will entail an outlay of £13,000.

Dr. F. St. George Mivart, one of the Local Government Board Inspectors, has held an inquiry in the Grand Juryroom at the Assize Courts, Manchester, relative to the application of the Lancashire County Council for sanction to borrow £900 for the purchase by the Littleborough, Milnrow, and Wardle Hospital Committee of a site for an isolation hospital for infectious diseases other than smallpox.

Messrs. E. H. Shorland and Brother, of Manchester, have just supplied their patent Manchester grates, exhaust roof and inlet ventilators, to the Baptist chapel, Leighton Buzzard.

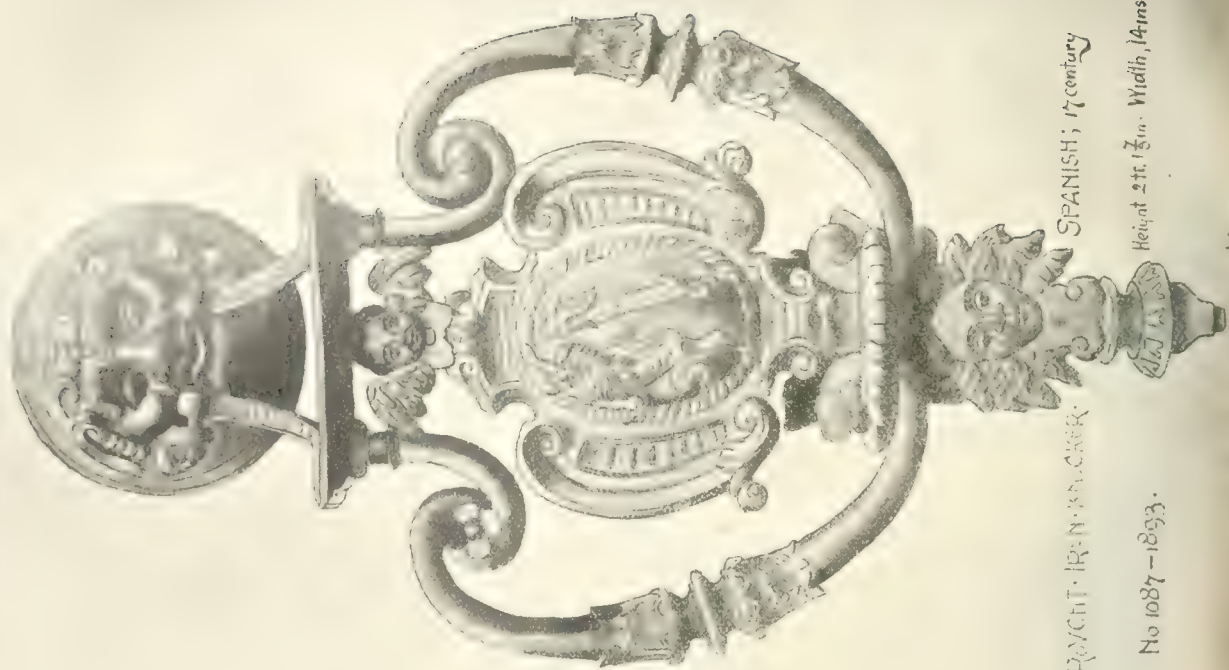
WROUGHT-IRON BRACKET.
From Eynatten, near Aix-la-Chapelle.
FLEMISH; middle of 18th century.



No. 1087.

Height, 2 ft 8 $\frac{1}{2}$ in. Width, 2 ft 6 in.

South Kensington Museum



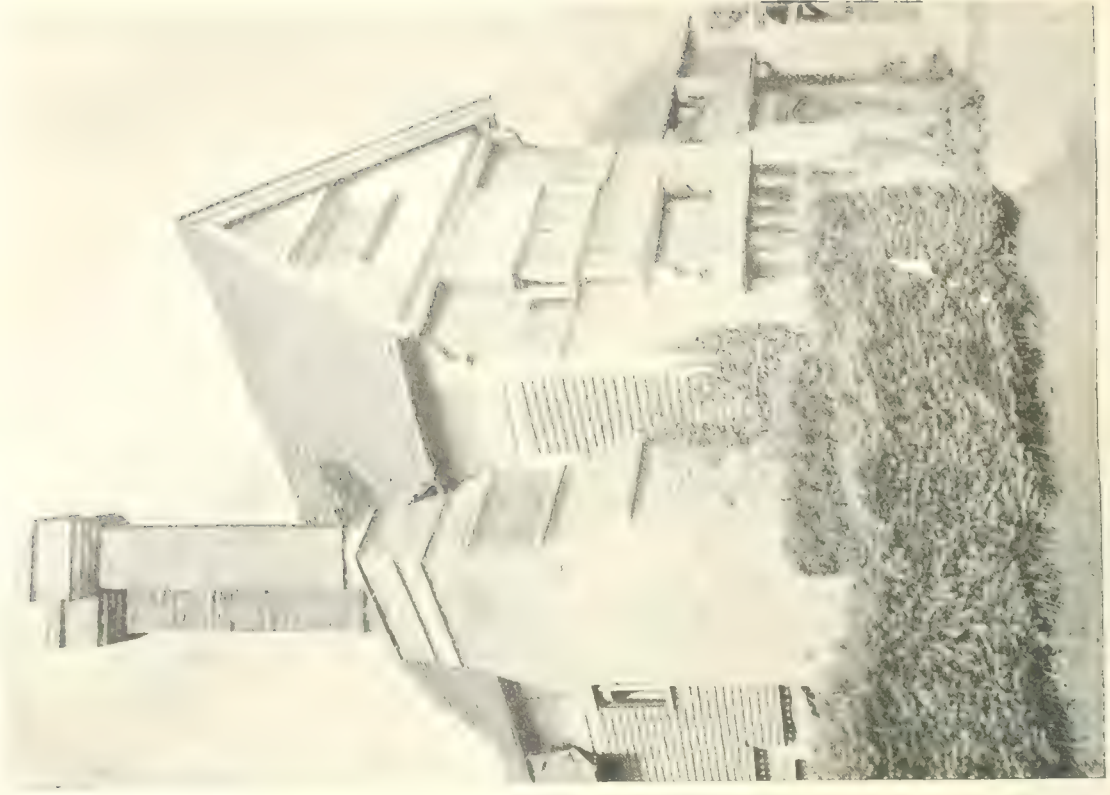
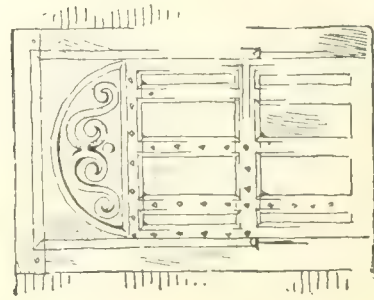
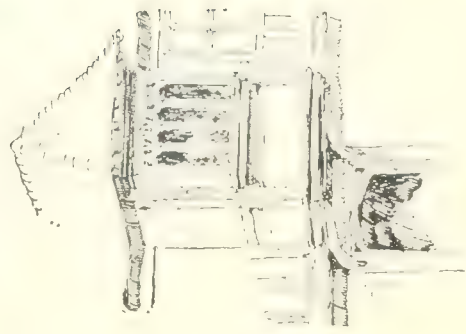
WROUGHT-IRON BRACKET.

SPANISH; 17th century.

Height 2 ft 1 $\frac{3}{4}$ in. Width, 14 ins.

No 1087-1893.

South Kensington Museum



OLD HOUSES AT PENSURST, KENT.

Photographed by H. Galsworthy Dore, Architect

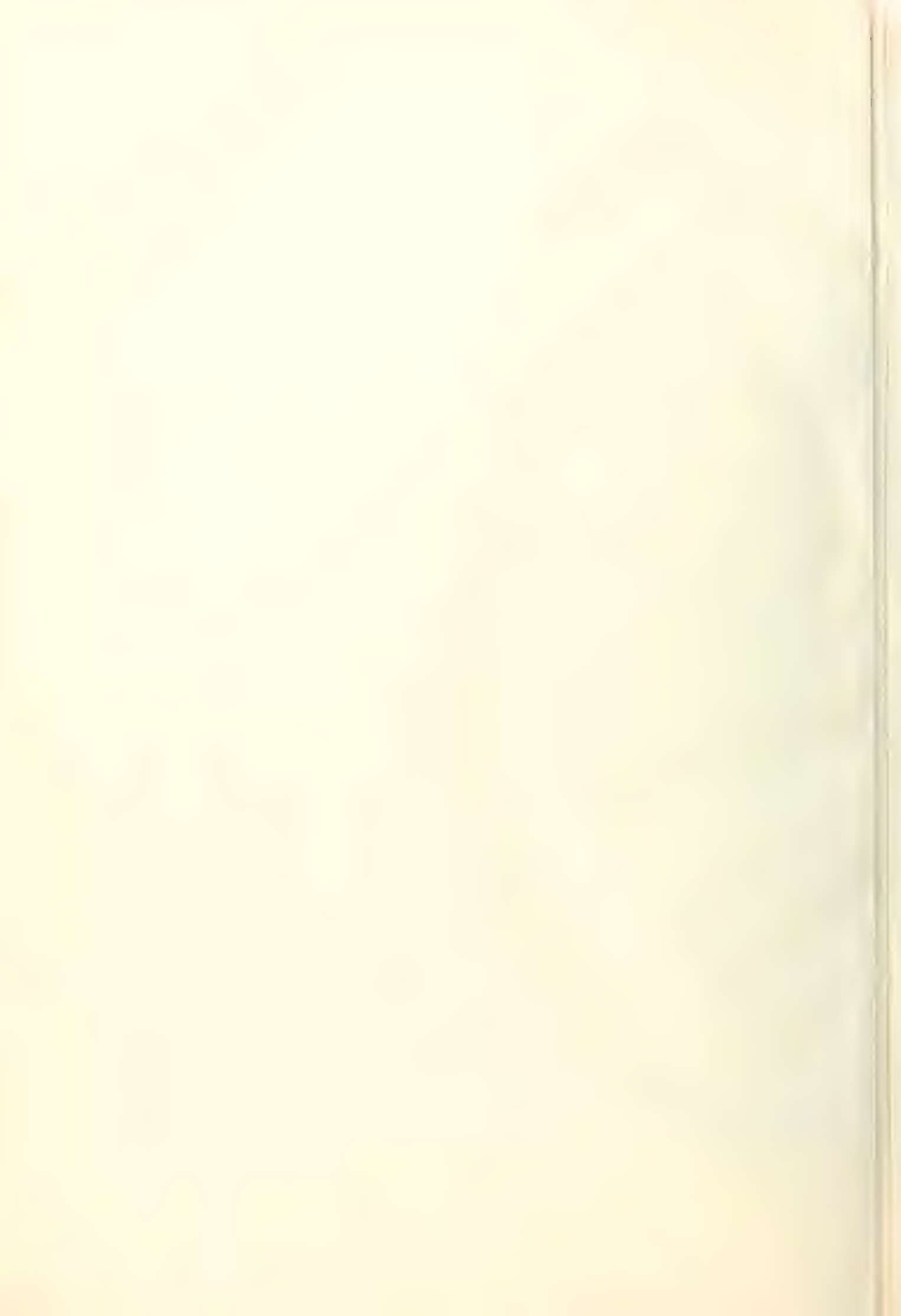


NEW BOROUGH
MESSRS. L.



HALL, LEEDS.
LEEFMING.

London Scottish Engineering Co., Ltd.







NEW BOROUGH
MESSRS. LE...



MARKET HALL, LEEDS.
HEMING, ARCHITECTS.

London Scottish Engineering Co., Ltd.

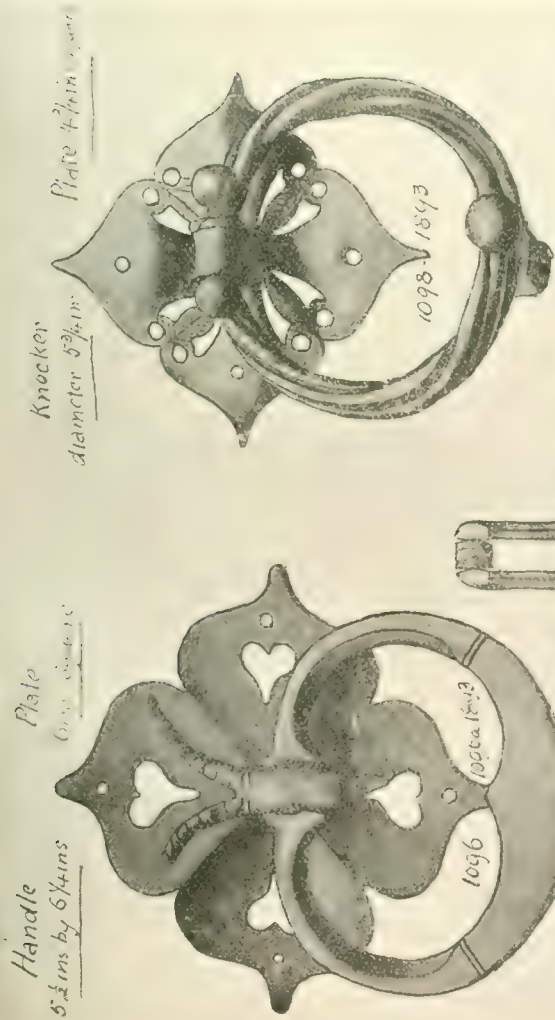


THE WESLEYAN CENTENARY HALL, BISHOPSGATE STREET, E.C.—DESIGN PLACED SECOND.
MESSRS. BANISTER FLETCHER AND SONS, ARCHITECTS.

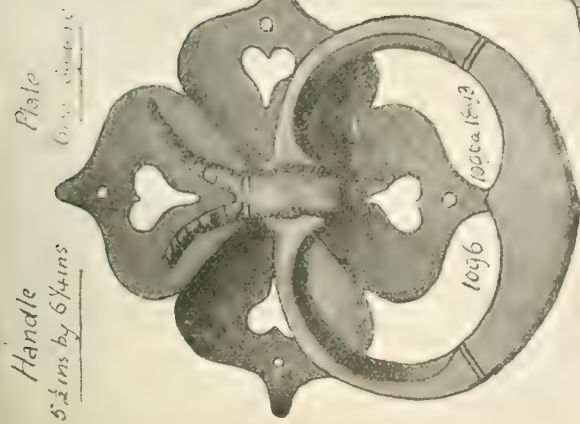
London Scottish Engraving Co.,



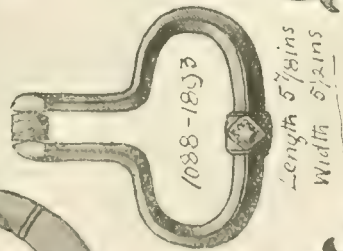
WROUGHT-IRON DOOR, PAINTED AND GILT. FRENCH (period of Louis XVI) late 18th century
 No 486-1895. Height 2 ft. 3 1/2 ins. Width 21 1/8 ins.
 South Kensington Museum



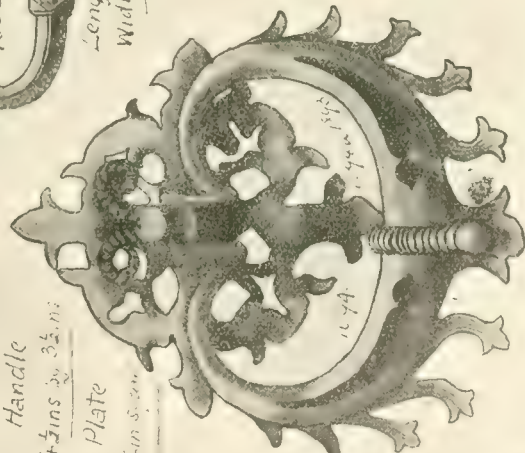
Knocker
 diameter 5 3/4 ins.
 Plate 7 1/2 ins. diam.



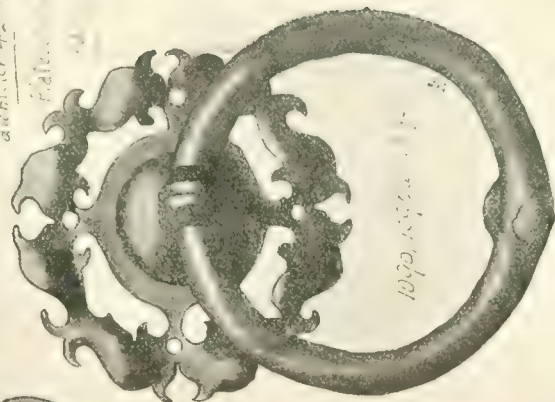
Handle
 5 1/2 ins. by 5 1/4 ins.
 Plate 6 1/2 ins. diam.



1088-1893
 Length 5 1/2 ins.
 Width 5 1/2 ins.



Handle
 4 1/2 ins. by 3 1/2 ins.
 Plate
 2 1/4 ins. 5 1/2 ins.



Handle
 diameter 4 1/2 ins.
 Plate 7 1/2 ins. diam.

WROUGHT-IRON DOOR HANDLES.
 German and Italian; 10th and 17th Centuries.
 South Kensington Museum.

OBITUARY.

Mr. WILLIAM BASSETT-SMITH, senior partner in the firm of W. and C. A. Bassett-Smith, architects, of 10, John-street, Adelphi, W.C., died on Friday last at his residence, Northside, Clapham Common. He had a large practice in church building and restoration, among his later works being the new churches of St. Barnabas on Clapham Common, and St. Paul's, Plumstead Marshes, the last named but just commenced.

Colonel SMITH, for many years senior partner in the firm of Smith and Brodick, architects, Hull, died at his residence in Westwood-road, Beverley, late on Sunday night, aged 63 years. He had reached the rank of colonel in the Hull Rifle Volunteers. He was also a prominent Freemason, and at the time of his death was Deputy rev. Grand Master of the Mark Masons. He married a daughter of the late Anthony Bannister, a prominent Hull merchant, and for a considerable period carried out the duties of estate agent for Colonel Lloyd Greene, of Seaworthy. He removed to Beverley about four years ago.

Mr. SAMUEL GREEN, for the past four years one of the Aldermen of the City of London, died on Tuesday evening at his residence, Morevale, Bickley Park, after a short illness, aged 70 years. He was for over 45 years the head of the firm of Messrs. Green and Son, auctioneers and surveyors, in St. Swithin's-lane. He had been a Fellow of the Surveyors' Institute since 1884, and was an ex-Master of the Tallow Chandlers' Company.

Mr. WILLIAM SANTO CRIMP, M.I.C.E., of the firm of Santam Crimp and Taylor, sanitary engineers, succumbed to an attack of pneumonia on Sunday last at his residence, 16, Phillimore-gardens, W., at the comparatively early age of 47 years. He commenced practice as a civil engineer at Wimbledon, and afterwards entered the service of the London County Council, retiring a few years since from the engineer's department of that body to enter upon private practice in partnership with the Brothers Taylor. He carried out many schemes of sewerage and water supply for towns both in England and abroad. Last year, as we recorded at the time, Mr. Santo Crimp journeyed to Bombay to advise the municipality as to the sewerage of that town, and while in India he was consulted by many other local authorities on engineering problems. The funeral took place at Kensal Green Cemetery on Wednesday afternoon.

CHIPS.

The Bill promoted by the City Corporation for the widening of London Bridge passed its third reading in the House of Commons on Monday night.

The names of Harry Steward Watling, of Thorpe St. Andrew, Norfolk, architect, and of Henry Isaac Watling, also of Thorpe St. Andrew, Norfolk, builders, appear in Tuesday's list of Receiving Orders as given in the *London Gazette*.

The new Church of St. Martin, Upper Knowle, Bristol, was consecrated on Tuesday by the Lord Bishop of the Diocese. The scheme provided for a building to accommodate 700 worshippers; but the work completed is limited to the chancel, vestries, and two bays of the nave. The style is Early English, and the building is of Pennant stone, with Bath stone dressings. The portions completed will cost about £3,000. Mr. W. V. Gough is the architect, and Mr. Milton Dartford, also of Bristol, is the contractor.

At a special meeting of the London and India Docks Company, held on Friday at the Cannon-street Hotel, a resolution was carried approving a Bill authorising the company to construct a new dock adjoining the Albert Dock at a cost estimated at from £1,500,000 to £2,000,000, and to raise for that and other purposes £2,666,000 of capital.

The Metropolitan Asylums Board have received the sanction of the Local Government Board to the borrowing of the sum of £125,694 for the erection of an ophthalmic school at Swanley.

The parish church of Cornwelly, near Probus, Cornwall, has recently been reopened after restoration from plans by Messrs. St. Aubyn and Wadling, of London. The cost was about £760.

The Mersey Docks and Harbour Board have adopted a recommendation to provide two elevated platforms, with approaches, at the Prince's Landing Stage, at an estimated cost of £1,550. The platforms are required in connection with the landing and embarking of passengers from and on ocean-going steamers.

PROFESSIONAL AND TRADE SOCIETIES.

EDINBURGH ARCHITECTURAL ASSOCIATION. On Saturday afternoon the members of this Association paid a visit to several old buildings in the vicinity of the city. They first visited the old Chapter House at Restalrig by permission of the Earl of Moray. They then proceeded to Duddingston, where they inspected the mansion-house, which is a very perfect example of Sir William Chambers' work, built in 1768. Afterwards they visited Duddingston Church. At the manse the Rev. J. A. Hunter exhibited the fine old communion service. The leaders were— at Restalrig, Mr. A. Hunter Crawford; at Duddingston House, Mr. Hippolyte Blanc; and at the church, Mr. G. S. Aitken.

MIDLAND MASTER BUILDERS AND FEDERATION. A quarterly meeting of the executive of the Midland centre of the National Federation of Building Trades' Employers was held on Friday at the offices, Birmingham, and from the reports submitted from various parts of the Midland Counties it would appear that a general depression is being experienced in the building industry. The president (Mr. A. Chambers, Leicester) occupied the chair, and amongst those present were County Alderman Bowen, Messrs. William Sapcote, F. G. Whittall, and Albert S. Smith (Birmingham); Mr. E. Fox (Leicester); Messrs. J. Wright, H. Vickers, and F. Hodson (Nottingham); Councillor Green (Northampton), T. Skett and J. Herbert (Wolverhampton), D. Jakeman (Dudley), County Councillor Dallow (Stourbridge), H. Smith (West Bromwich), J. Sharnan Wood (Worcester), W. Wistance (Walsall), H. Smith (Kidderminster), &c. A long discussion took place in connection with notices given to or received from workmen in the various branches of the trade at Burton-on-Trent, Coventry, Nuneaton, Newark, Dudley, Kidderminster, Sutton Coldfield, and other places, and it was pointed out that under the conditions generally observed in the trade these notices now expired at a period of the year when work, as a rule, was most plentiful, and consequently the employers, in order to carry out their contracts, were frequently compelled to make concessions that were unjust to themselves and extracted on unreasonable grounds. The president remarked that as a body master builders had no desire to act arbitrarily as against their workmen, but from experience they were aware that many of the conditions the workmen's trade-unions tried to enforce were detrimental to the best interests of the trade. Mr. J. Wright (Nottingham) said that one of the bugbears of the trade was what was known as the line of demarcation laid down by the trade-unionists. The question was one of great importance to the welfare of the building trade throughout the country, and it behoved the National Federation of Employers to take steps to prevent unjust and meddlesome interference with the masters' common rights. A resolution was passed affirming the necessity for more combined action throughout the kingdom in dealing with disputes in the trade, which too frequently led to strikes and lock-outs. Another point discussed was the desirability for a uniform contract form containing clauses applicable all over the country in relation to such matters as strikes, lock-outs, arbitration, and weather.

SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.—The annual meeting of this society was held, on the 10th inst., in the School of Art. The chair was occupied by Mr. Joseph Smith. Mr. J. R. Wigfull and Mr. J. B. Mitchell-Withers having been elected as Fellows of the society, an alteration of the rules was agreed to, with the view of strengthening the council. Mr. W. C. Fenton, hon. secretary, presented the financial statement, which showed that the receipts for the year amounted to £210 10s. 7d., and that there was a balance in hand of £99 4s. 6d. Mr. Fenton also read the fourteenth annual report of the council, which stated that the membership was 112, as compared with 109 last year. The question of a proposed competition in connection with the Norfolk Market Hall, and the R.I.B.A. suggestions with regard to competitions, had been sent to the chairman of the finance committee, who promised that due consideration should be given to them. The council had to regret, however, that the draft conditions which were submitted to them were not satisfactory in several respects, and had intimated to the finance committee that in their opinion the competition was not at all necessary for this building, and

that the architect from whose hands it had previously received attention should have been consulted on the matter. One of the clauses of the Corporation Bill (1900), objected to by the society, had been modified when going through the Houses of Parliament. The city council had decided to take over the School of Art from Aug. 1 next, and it was hoped that this change would have the effect of procuring better facilities for the society than had hitherto been the case. A letter had been sent to the town clerk in regard to the proposed action of the plans sub-committee for the highway committee to restrict the construction of area lights in footpaths. The proposed prohibition of area-lights was a serious matter affecting the value of property, both to owners and ratepayers of the city. The chairman, vice chairman, and city surveyor have promised to meet the deputation from the society at a future date, and discuss the matter in detail. The report was adopted. The following officers were then elected by ballot: President, Mr. Peter Marshall; vice-president, Mr. Thomas Winder; treasurer, Mr. Frederick Fowler; secretary, Mr. W. C. Fenton; members of the council, Messrs. J. R. Wigfull, R. W. Fowler, C. Hadfield, J. B. Mitchell-Withers, E. M. Gibbs, H. L. Paterson (Fellows), C. B. Flocton, C. F. Innocent, and C. M. Hadfield (Associate members). Mr. Gibbs expressed his intention of retiring, and the next on the list, Mr. Edward Holmes, was put in his place. The President presented the society's prizes to Messrs. H. W. Inott and J. Miller, and it was then announced by Mr. Joseph Smith that in future the society would have a home of its own, arrangements having been made to take a room in the building of the Literary and Philosophical Society.

CHIPS.

On the recommendation of the directors of the Welshpool and Llanfair Light Railways, the Cambrian Railways Company, being the working company, have accepted the tender of Mr. J. Strachan, at Cardiff, for the construction of this light railway. This is the first contract to be let under the Act of 1896, and work will be put in hand almost immediately. The line will be about eight miles long, and will run through the major portion of Lord Powis's Montgomeryshire property. Mr. A. J. Collin is the engineer.

The Star beerhouse in the High-street, Chatham, is about to be pulled down, set back 6ft., and rebuilt with an extended frontage as fully licensed premises. Mr. W. T. Boucher, of Chatham, is the architect, and the estimated cost is about £4,000.

The Archbishop of Cape Town has arrived in England to raise a fund to build the eastern portion of the new cathedral at Cape Town, as a memorial to those who have fallen in the war either through wounds or sickness. The memorial is estimated to cost about £30,000, of which about £1,000 is in hand. The total building operations in connection with the new cathedral will entail an expenditure of something like £60,000; but the other £30,000 will be raised independently of the memorial. There is already in hand nearly £20,000 towards the general portion.

The town clerk of Coventry has received the assent of the Local Government Board to the borrowing by the Corporation of £32,962, for the purpose of constructing sewers at Foleshill and Stoke, recently added to the city.

The Chelsea Borough Council have received a report from the public baths committee recommending that new public baths be erected on a site acquired by the late vestry, adjoining the town-hall. The scheme includes the provision of about one hundred private baths and three swimming-baths, the largest being 100ft. by 35ft., whilst one (60ft. by 25ft.) will be reserved for ladies, for whom about fifty private baths will also be provided. The cost of carrying out the scheme, exclusive of the price of the site, is estimated at between £60,000 and £70,000. The committee also reported that a scheme for public washhouses can be carried out on land adjacent to the site, but that additional land would be required, and the cost would be from £8,000 to £10,000. The committee, however, recommended that the question of the washhouses be adjourned for twelve months.

At the last meeting of the urban district council for Withington tenders were accepted at £22,964 and £21,612 for the erection of main sewers. The first of these contracts relates to the construction of new main outfall sewers from the sewage farm to a point near Hough End Hall, Nell-lane, Chorlton-cum-Hardy, and the second to the construction of new main outfall sewers from a point in Withington-road, Whalley Range, to near Hough End Hall, and forward to a point near the corner of Burton-road and Lapwing-lane, West Didsbury.

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Works of water supply are being carried out for Duntocher and Dalmuir, the contractor being Mr. James Miller, whose tender has just been accepted for the new reservoir for Kirkintilloch.

LEGAL INTELLIGENCE.

LEICESTER ARBITRATION.—At the Surveyors' Institution, Sir Frederick Bramwell sitting as umpire, held last week an inquiry into the value of an area of land comprising about 1,270 acres and forming part of the Beaumont Leys estate, near Leicester, belonging to Sir Tristram Tempest, which property is being acquired by the Leicester Corporation, under their Act of 1897, for the purposes of a sewage farm. Sir John Rolleston, M.P., and Mr. E. Lovell Clare, of Leeds, were the arbitrators for the corporation and the claimant respectively. In 1886 the corporation decided to acquire the land in question for the purposes of a sewage farm. A scheme was approved after a Local Government Board inquiry, and borrowing powers were sanctioned for the purchase of the main portion of the estate. In the result 100 acres were purchased at £130 per acre, the price paid being £13,077, including timber. In November, 1887, a lease of 1,275 acres was granted to the corporation for a term of 30 years from March 25, 1886, the rent being fixed at £2,860. Since the conveyance of the land considerable changes had occurred in the neighbourhood. The population of Leicester had vastly increased, owing to the extension of the boundary, the Great Central Railway had been constructed, and a station erected at Burstall, adjoining the property, and a light railway scheme had been promoted, the proposed line to run from the tramway terminus on the north-west side of the borough to the village of Anstey along the road bordering the estate. These changes, it was submitted, had increased the value of the property, which the claimants looked upon as building land. Mr. E. Lovell Clare, agent to Sir Tristram Tempest, said the corporation had spent a considerable sum in laying down their sewage farm, and a large outlay would be necessary before the land could be restored to its original condition in accordance with the original terms of the lease. The rent reserved under the lease was no criterion whatever of the actual value. His valuation of the freehold and leasehold interest amounted to £386,944, including 10 per cent. for compulsory sale. He estimated the consequential damage to the remainder of the estate, 140 acres, at £150 an acre, or £21,000, making his total figures £407,940. Mr. Charles Gott, C.E., F.S.I., of Bradford, adopted Mr. Clare's valuation. Mr. H. A. Roehling, C.E., Leicester, estimated the value of the freehold and leasehold interest at £378,559, including 10 per cent. for forced sale. He adopted Mr. Clare's figure of £21,000 as representing the consequential damage to 140 acres forming the remainder of the claimant's estate. The presence of sand and marl in large quantities considerably enhanced the value of the land as a building site. Cross-examined, the witness said that his original valuation was £413,816. Further evidence was given by Mr. J. E. Mommott, C.E., and Mr. Thomas Fenwick, C.E., F.S.I., Leeds, Mr. J. T. Wood, C.E., Liverpool, Mr. Charles G. Bolam, C.E., Kettering and London, and Mr. Gibson Martin, F.S.I., agent to the Duke of Devonshire. The case for the claimant having been concluded, Sir John Rolleston was called to give evidence on behalf of the corporation. The land in question was considered by the sewerage committee of the Leicester Corporation very unprofitable for the purposes of a sewage farm, owing to the quality of the soil, and was only taken owing to a question of expediency, and because it was isolated and free from contiguous population. It was thought that by purchasing a hundred acres the sewage could be conducted by gravitation on to other land than that of the claimant. The land had merely an agricultural value, and was not worth more than £1 per acre at that time. Though he admitted that Leicester was a growing town, building operations there had not progressed so rapidly of late years, and there were many estates in the district now available for building. Nobody could buy the land in question, except as an investment, with any degree of certainty of getting a fair return for capital. He valued the area taken under the notice to treat—1,269a. 3r. 12p., at 45s. per acre, or £2,857 2s., less fee farm rents, £75 16s. 11d.—£2,781 5s. 1d. He capitalised this figure at thirty years' purchase, £83,437 12s. 6d., deducted certain outgoings amounting to £736 5s. 9d., and added the usual 10 per cent., making his total figures £90,971 9s. 5d., plus a payment of £1,500 in respect of certain water mains along Anstey-lane. Mr. Daniel Watney, F.S.I., London, valued the property at £92,436; Mr. George T. Wade, F.S.I., of Leicester, at £95,882 12s. 3d.; and Mr. J. B. Everard, F.S.I., Leicester, at £103,384 8s. 10d. Mr. T. T. Wainwright, F.S.I., of Liverpool, valued the land acquired in perpetuity on the basis of the payment of the rent payable under the lease, 1,269a. 3r. 12p. at 45s. per acre, capitalised on the 3½ per cent. table, thirty years' purchase, £83,713 5s., less outgoings, £2,620 5s. 6d.—£83,092 19s. 6d. He added the usual 10 per cent. for compulsory sale, making his total figures £92,902 5s. 6d., including £1,500 payable for water easements. Mr. W. E. Woolley, F.S.I., Loughborough, estimated the total value at £92,898, and Mr. Orson Wright, of Leicester, at £87,300. These and other witnesses

agreed that the land in question had no building value whatever. This concluded the evidence.

Our Office Table.

As the outcome of a meeting of the leading members of the furniture trade held at Birmingham early in March, the suggestions made on that occasion have assumed a concrete form. The trade has hitherto had no provident or benevolent association connected with it; but an institution is in course of formation which will have the title of the "Furnishing Trades Provident and Benevolent Institution," and the objects for which it is founded are: first, to grant pecuniary assistance to members when in sickness or in necessitous circumstances; secondly, for like assistance to widows and children of members; and, thirdly, for the foundation of orphanages for fatherless children of members. The president is Mr. C. F. Marriner, of the firm of Crosbie, Marriner, and Co., Birmingham. Already more than £1,000 has been subscribed.

By order of the Official Receiver at Exeter, the stock in trade of a monumental sculptor was sold by auction this week in that city. Amongst the effects were well-modelled life-sized plaster busts of several of Exeter's mayors. The first, that of the present popular mayor, Mr. A. E. Dunn, went for £1; that of Mr. Thomas Andrew, J.P., a former mayor, and present resident in the city, together with a life-sized profile bas-relief of the same gentleman, fetched after long bidding £1 7s. for the two; whilst the bust of the late Mr. Horace Lloyd, J.P., who was Mayor of Exeter some quarter of a century ago, after some difficulty, was knocked down for 7s. Who wouldn't be Mayor of Exeter after that?

THE Horse Parade in Battersea Park, which, with the permission of the London County Council, has, thanks to Messrs. Eastwood and Co., Limited, become a welcome yearly fixture to all interested in well-kept, well-conditioned horses, takes place to-morrow. The judging begins at 11 a.m. sharp. The classes, as usual, are divided into pair-horse vans, single-horse vans and carts, and light vans and carts. The judges of the horses are Mr. Sulman and Seret Redding; of the harness, Mr. Bristow and Mr. Howard; and of the vehicles, Mr. Townsend and Mr. Bines. Mr. Lawson is responsible for the arrangements, Mr. Henry J. Byrne is the umpire, and Mr. George Wragge, the popular managing-director of this old established firm will, we are sure, receive the congratulations of all visitors capable of appreciating the results of the wholesome emulation thus inspired in the care of the firm's faithful four-footed servants.

MEETINGS FOR THE ENSUING WEEK.

SATURDAY TO-MORROW.—St. Paul's Ecclesiological Society. Visits to Churches of St. Mary, Willesden, and St. Andrew, Willesden Green. Train to Neasden: meet at St. Mary's Church, 3 p.m.
Northern Architectural Association. Visit to Sunderland. Train from Newcastle, 2.32 p.m.
MONDAY.—Royal Institute of British Architects. Business meeting to consider the Queen Victoria Memorial Competition. 8 p.m.
Surveyors' Institute. "The Ownership of the Highways," by A. Clavell Slatten, barrister-at-law. 8 p.m.
Society of Arts. "Alloys," Cantor Lecture No. 2, by Sir W. C. Roberts-Austen, K.C.B., F.R.S. 8 p.m.
TUESDAY.—Society of Arts. "The British West Indies," by Sir Neville Lubbock, K.C.M.G. 4.30 p.m.
Institution of Civil Engineers. Annual Members' Meeting. 8 p.m.
WEDNESDAY.—Society of Arts. "Thames Steamboat Service," by Arnold P. Hills. 8 p.m.
THURSDAY.—Civil and Mechanical Engineers' Society. "The Storage of Electricity," by A. H. Allen, A.M.I.E.E.
Carpenters' Hall Lectures. "Timber Framing," by Jas. Bartlett, M.S.A. 8 p.m.
FRIDAY.—Society of Arts. "Polyphase Electric Working," Howard Lecture No. 2, by Alfred C. Eborall, A.I.E.E. 8 p.m.

A new board school for infants, Broad Lanes, Sedgley, was opened on Monday last. The builders are Messrs. Keay, of Darlaston and Birmingham, and the architect Mr. S. H. Eachus, of Lichfield-street, Wolverhampton and Birmingham.

LATEST PRICES.

IRON, &c.

	Per ton.	Per ton.
Roller-Iron Joists, Belzon	26 0 0	to 26 10 0
Roller-Steel Joists, English	9 0 0	to 10 0 0
Wrought-Iron Grid Plates	9 0 0	to 9 15 0
Bar Iron, good Staffs	8 7 6	to 9 7 6
Do., Lowmoor, Flat, Round, or Square	20 0 0	to 20 0 0
Do., Welsh	5 15 0	to 5 17 6
Boiler Plates, Iron	7 17 6	to 8 5 0
South Staffs	13 0 0	to 13 10 0
Best Sheet-iron	13 0 0	to 13 10 0
Angles 108 x 7, 125 x 8, 150 x 10, 175 x 12, 200 x 14, 225 x 16, 250 x 18, 275 x 20, 300 x 22, 325 x 24, 350 x 26, 375 x 28, 400 x 30, 425 x 32, 450 x 34, 475 x 36, 500 x 38, 525 x 40, 550 x 42, 575 x 44, 600 x 46, 625 x 48, 650 x 50, 675 x 52, 700 x 54, 725 x 56, 750 x 58, 775 x 60, 800 x 62, 825 x 64, 850 x 66, 875 x 68, 900 x 70, 925 x 72, 950 x 74, 975 x 76, 1000 x 78, 1025 x 80, 1050 x 82, 1075 x 84, 1100 x 86, 1125 x 88, 1150 x 90, 1175 x 92, 1200 x 94, 1225 x 96, 1250 x 98, 1275 x 100, 1300 x 102, 1325 x 104, 1350 x 106, 1375 x 108, 1400 x 110, 1425 x 112, 1450 x 114, 1475 x 116, 1500 x 118, 1525 x 120, 1550 x 122, 1575 x 124, 1600 x 126, 1625 x 128, 1650 x 130, 1675 x 132, 1700 x 134, 1725 x 136, 1750 x 138, 1775 x 140, 1800 x 142, 1825 x 144, 1850 x 146, 1875 x 148, 1900 x 150, 1925 x 152, 1950 x 154, 1975 x 156, 2000 x 158, 2025 x 160, 2050 x 162, 2075 x 164, 2100 x 166, 2125 x 168, 2150 x 170, 2175 x 172, 2200 x 174, 2225 x 176, 2250 x 178, 2275 x 180, 2300 x 182, 2325 x 184, 2350 x 186, 2375 x 188, 2400 x 190, 2425 x 192, 2450 x 194, 2475 x 196, 2500 x 198, 2525 x 200, 2550 x 202, 2575 x 204, 2600 x 206, 2625 x 208, 2650 x 210, 2675 x 212, 2700 x 214, 2725 x 216, 2750 x 218, 2775 x 220, 2800 x 222, 2825 x 224, 2850 x 226, 2875 x 228, 2900 x 230, 2925 x 232, 2950 x 234, 2975 x 236, 3000 x 238, 3025 x 240, 3050 x 242, 3075 x 244, 3100 x 246, 3125 x 248, 3150 x 250, 3175 x 252, 3200 x 254, 3225 x 256, 3250 x 258, 3275 x 260, 3300 x 262, 3325 x 264, 3350 x 266, 3375 x 268, 3400 x 270, 3425 x 272, 3450 x 274, 3475 x 276, 3500 x 278, 3525 x 280, 3550 x 282, 3575 x 284, 3600 x 286, 3625 x 288, 3650 x 290, 3675 x 292, 3700 x 294, 3725 x 296, 3750 x 298, 3775 x 300, 3800 x 302, 3825 x 304, 3850 x 306, 3875 x 308, 3900 x 310, 3925 x 312, 3950 x 314, 3975 x 316, 4000 x 318, 4025 x 320, 4050 x 322, 4075 x 324, 4100 x 326, 4125 x 328, 4150 x 330, 4175 x 332, 4200 x 334, 4225 x 336, 4250 x 338, 4275 x 340, 4300 x 342, 4325 x 344, 4350 x 346, 4375 x 348, 4400 x 350, 4425 x 352, 4450 x 354, 4475 x 356, 4500 x 358, 4525 x 360, 4550 x 362, 4575 x 364, 4600 x 366, 4625 x 368, 4650 x 370, 4675 x 372, 4700 x 374, 4725 x 376, 4750 x 378, 4775 x 380, 4800 x 382, 4825 x 384, 4850 x 386, 4875 x 388, 4900 x 390, 4925 x 392, 4950 x 394, 4975 x 396, 5000 x 398, 5025 x 400, 5050 x 402, 5075 x 404, 5100 x 406, 5125 x 408, 5150 x 410, 5175 x 412, 5200 x 414, 5225 x 416, 5250 x 418, 5275 x 420, 5300 x 422, 5325 x 424, 5350 x 426, 5375 x 428, 5400 x 430, 5425 x 432, 5450 x 434, 5475 x 436, 5500 x 438, 5525 x 440, 5550 x 442, 5575 x 444, 5600 x 446, 5625 x 448, 5650 x 450, 5675 x 452, 5700 x 454, 5725 x 456, 5750 x 458, 5775 x 460, 5800 x 462, 5825 x 464, 5850 x 466, 5875 x 468, 5900 x 470, 5925 x 472, 5950 x 474, 5975 x 476, 6000 x 478, 6025 x 480, 6050 x 482, 6075 x 484, 6100 x 486, 6125 x 488, 6150 x 490, 6175 x 492, 6200 x 494, 6225 x 496, 6250 x 498, 6275 x 500, 6300 x 502, 6325 x 504, 6350 x 506, 6375 x 508, 6400 x 510, 6425 x 512, 6450 x 514, 6475 x 516, 6500 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1428, 17900 x 1430, 17925 x 1432, 17950 x 1434, 17975 x 1436, 18000 x 1438, 18025 x 1440, 18050 x 1442, 18075 x 1444, 18100 x 1446, 18125 x 1448, 18150 x 1450, 18175 x 1452, 18200 x 1454, 18225 x 1456, 18250 x 1458, 18275 x 1460, 18300 x 1462, 18325 x 1464, 18350 x 1466, 18375 x 1468, 18400 x 1470, 18425 x 1472, 18450 x 1474, 18475 x 1476, 18500 x 1478, 18525 x 1480, 18550 x 1482, 18575 x 1484, 18600 x 1486, 18625 x 1488, 18650 x 1490, 18675 x 1492, 18700 x 1494, 18725 x 1496, 18750 x 1498, 18775 x 1500, 18800 x 1502, 18825 x 1504, 18850 x 1506, 18875 x 1508, 18900 x 1510, 18925 x 1512, 18950 x 1514, 18975 x 1516, 19000 x 1518, 19025 x 1520, 19050 x 1522, 19075 x 1524, 19100 x 1526, 19125 x 1528, 19150 x 1530, 19175 x 1532, 19200 x 1534, 19225 x 1536, 19250 x 1538, 19275 x 1540, 19300 x 1542, 19325 x 1544, 19350 x 1546, 19375 x 1548, 19400 x 1550, 19425 x 1552, 19450 x 1554, 19475 x 1556, 19500 x 1558, 19525 x 1560, 19550 x 1562, 19575 x 1564, 19600 x 1566, 19625 x 1568, 19650 x 1570, 19675 x 1572, 19700 x 1574, 19725 x 1576, 19750 x 1578, 19775 x 1580, 19800 x 1582, 19825 x 1584, 19850 x 1586, 19875 x 1588, 19900 x 1590, 19925 x 1592, 19950 x 1594, 19975 x 1596, 20000 x 1598, 20025 x 1600, 20050 x 1602, 20075 x 1604, 20100 x 1606, 20125 x 1608, 20150 x 1610, 20175 x 1612, 20200 x 1614, 20225 x 1616, 20250 x 1618, 20275 x 1620, 20300 x 1622, 20325 x 1624, 20350 x 1626, 20375 x 1628, 20400 x 1630, 20425 x 1632, 20450 x 1634, 20475 x 1636, 20500 x 1638, 20525 x 1640, 20550 x 1642, 20575 x 1644, 20600 x 1646, 20625 x 1648, 20650 x 1650, 20675 x 1652, 20700 x 1654, 20725 x 1656, 20750 x 1658, 20775 x 1660, 20800 x 1662, 20825 x 1664, 20850 x 1666, 20875 x 1668, 20900 x 1670, 20925 x 1672, 20950 x 1674, 20975 x 1676, 21000 x 1678, 21025 x 1680, 21050 x 1682, 21075 x 1684, 21100 x 1686, 21125 x 1688, 21150 x 1690, 21175 x 1692, 21200 x 1694, 21225 x 1696, 21250 x 1698, 21275 x 1700, 21300 x 1702, 21325 x 1704, 21350 x 1706, 21375 x 1708, 21400 x 1710, 21425 x 1712, 21450 x 1714, 21475 x 1716, 21500 x 1718, 21525 x 1720, 21550 x 1722, 21575 x 1724, 21600 x 1726, 21625 x 1728, 21650 x 1730, 21675 x 1732, 21700 x 1734, 21725 x 1736, 21750 x 1738, 21775 x 1740, 21800 x 1742, 21825 x 1744, 21850 x 1746, 21875 x 1748, 21900 x 1750, 21925 x 1752, 21950 x 1754, 21975 x 1756, 22000 x 1758, 22025 x 1760, 22050 x 1762, 22075 x 1764, 22100 x 1766, 22125 x 1768, 22150 x 1770, 22175 x 1772, 22200 x 1774, 22225 x 1776, 22250 x 1778, 22275 x 1780, 22300 x 1782, 22325 x 1784, 22350 x 1786, 22375 x 1788, 22400 x 1790, 22425 x 1792, 22450 x 1794, 22475 x 1796, 22500 x 1798, 22525 x 1800, 22550 x 1802, 22575 x 1804, 22600 x 1806, 22625 x 1808, 22650 x 1810, 22675 x 1812, 22700 x 1814, 22725 x 1816, 22750 x 1818, 22775 x 1820, 22800 x 1822, 22825 x 1824, 22850 x 1826, 22875 x 1828, 22900 x 1830, 22925 x 1832, 22950 x 1834, 22975 x 1836, 23000 x 1838, 23025 x 1840, 23050 x 1842, 23075 x 1844, 23100 x 1846, 23125 x 1848, 23150 x 1850, 23175 x 1852, 23200 x 1854, 23225 x 1856, 23250 x 1858, 23275 x 1860, 23300 x 1862, 23325 x 1864, 23350 x 1866, 23375 x 1868, 23400 x 1870, 23425 x 1872, 23450 x 1874, 23475 x 1876, 23500 x 1878, 23525 x 1880, 23550 x 1882, 23575 x 1884, 23600 x 1886, 23625 x 1888, 23650 x 1890, 23675 x 1892, 23700 x 1894, 23725 x 1896, 23750 x 1898, 23775 x 1900, 23800 x 1902, 23825 x 1904, 23850 x 1906, 23875 x 1908, 23900 x 1910, 23925 x 1912, 23950 x 1914, 23975 x 1916, 24000 x 1918, 24025 x 1920, 24050 x 1922, 24075 x 1924, 24100 x 1926, 24125 x 1928, 24150 x 1930, 24175 x 1932, 24200 x 1934, 24225 x 1936, 24250 x 1938, 24275 x 1940, 24300 x 1942, 24325 x 1944, 24350 x 1946, 24375 x 1948, 24400 x 1950, 24425 x 1952, 24450 x 1954, 24475 x 1956, 24500 x 1958, 24525 x 1960, 24550 x 1962, 24575 x 1964, 24600 x 1966, 24625 x 1968, 24650 x 1970, 24675 x 1972, 24700 x 1974, 24725 x 1976, 24750 x 1978, 24775 x 1980, 24800 x 1982, 24825 x 1984, 24850 x 1986, 24875 x 1		

LIST OF COMPETITIONS OPEN.

Kendal Public Library, North-West District Assoc.	£1,000	W. H. Hopkinson, A.M.I.C.E., Boro' Eng., Town Hall, Keighley	April 30
Hospital, Royal Free, London	200,000, 250,000, 300,000	T. Llanwaine, Clerk, St. John-street, Hereford	May 17
Amalgamated Building Society, London	£100,000, £200,000, £300,000	Norman Chilton, Clerk, Station-road, Aldershot	May 27
Public Works, London	£100,000, £200,000, £300,000	W. H. Grieves, Town Surveyor, Town Hall, Buxton	June 8
Public Works, London	£100,000, £200,000, £300,000	John Enwright, Clerk, Ennis District Lunatic Asylum, Co. Clare	10
Public Works, London	£100,000, £200,000, £300,000	W. J. Martin, Clerk, Union-street, Trowbridge	24
Public Works, London	£100,000, £200,000, £300,000	John Parker, City Engineer, Hereford	30
Public Works, London	£100,000, £200,000, £300,000	The Town Clerk, Town Hall, Manchester	July 31
Public Works, London	£100,000, £200,000, £300,000	H. G. Stevenson, Town Clerk, Darlington	
Public Works, London	£100,000, £200,000, £300,000	E. T. Atchison, Clerk, 8, Waterloo-road, New Brompton	
Public Works, London	£100,000, £200,000, £300,000	T. C. Smith, Clerk to School Board, Berwick-upon-Tweed	
Public Works, London	£100,000, £200,000, £300,000	G. Cosgrove, Solicitor, New Southgate, N.	
Public Works, London	£100,000, £200,000, £300,000	The Borough Engineer, Town Hall, Salford	

LIST OF TENDERS OPEN.

BUILDINGS.

W. H. Hopkinson, A.M.I.C.E., Boro' Eng., Town Hall, Keighley	April 30
John F. Curwen, F.R.I.B.A., Highgate, Kendal	27
Henry Maddern, F.I.A., Architect, 26, Clarence-street, Penzance	27
Swire, H. Hutley, Carleton, Poulton-le-Fylde	27
Wm. E. Putman, A.M.I.C.E., Boro' Engineer, Town Hall, Morley	27
Blackwood and Jury, Architects, 41, Donegall-place, Belfast	27
T. Rodenick, Architect, Clifton-street, Aberdeen	27
Carby Hall and Dalby, Architects, Prudential Bldgs., Park-row, Leeds	27
Clark and Moscrop, Architects, Feethams, Darlington	27
C. P. Wilkinson, Architect, 35, Park-square, Leeds	27
Henry Maddern, Architect, 26, Clarence-street, Penzance	27
Clark and Moscrop, Architects, Feethams, Darlington	27
T. Rodenick, Architect, Clifton-street, Aberdeen	27
William and Segar Owen, Architects, Warrington	27
W. Perkins, Architect, Bishop Auckland	27
Ernest F. Hooper, Architect, 6, Union-road, Exeter	27
Hall and Fenton, Architects, 14, St. James's-row, Sheffield	27
Alex. Smith, Gas Engineer, 2, Broad-street, Aberdeen	29
Sydney Mitchell and Wilson, Architects, 13, Young-st., Edinburgh	29
H. G. Whyatt, A.M.I.C.E., Boro' Eng., Town Hall-sq., Grimsby	29
R. G. Nicol, Harbour Engineer, Harbour Eng.'s Office, Aberdeen	29
W. H. Hall and Son, 28, South Mall, Cork	29
Boobis and Handy, Architects, Morpeth	29
N. H. Dawson, C.E., Borough Surveyor, Banbury	29
Sydney Mitchell and Wilson, Architects, 13, Young-st., Edinburgh	29
The Company's Engineer, Buchanan-street Station, Glasgow	29
Odden F. Read, Clerk, Middlesbrough	29
R. Horsfall and Son, Architects, 22A, Commercial-street, Halifax	29
J. Willis Mills, Town Clerk, Beverley	30
The Gen. Branch Archt.'s Dept., County Hall, Spring Gardens, S.W.	30
J. G. and R. G. Cowe, Architects, Chester-le-Street	30
W. H. Mitchell, Son, and Gutteridge, 9, Portland-st., Southampton	30
J. H. Taylor, Architect, 15, Grove-street, Kearsley, Farnworth	30
The Secretary, H.M. Office of Works, Storey's Gate, S.W.	30
L. and J. Falconer, Architects, 27, Bank Buildings, Blairgowrie	30
T. J. Trowsdale, Surveyor, Annfield Plain	30
W. Hamilton Fearnley, Architect, Station-lane, Featherstone	30
John W. Moncur, Borough Surveyor, Town Hall, Sunderland	30
T. D. Lindley, Architect, Market-avenue, Ashton-under-Lyne	30
Thos. Kidd, Surveyor, Coppice Side, Swadlow	30
The Rev. M. Canty, P.P., Dromin, Kilmallock	30
F. Trethewey, Sec., Gasworks, Keyham, Devonport	30
Arthur Clyne, F.R.I.B.A., 123, Union-street, Aberdeen	30
The Secretary, H.M. Office of Works, Storey's Gate, S.W.	30
A. and W. Black, Architects, Falkirk	May 1
G. T. Wilson, Architect, 121, Durham-road, Blackhill	1
James Lord, C.E., Borough Engineer, Town Hall, Halifax	1
R. M. McDowell, Architect, Carlton-street, Castleford	1
The City Engineer's Office, Municipal Buildings, Leeds	1
James W. Nash, Surveyor, Midway-terrace, Rochester	1
William Buck, Architect, Horsham	1
W. E. Pinkerton, M.R.I.A.I., Architect, Diamond, Londonderry	1
W. H. Hopkinson, A.M.I.C.E., Boro' Eng., Town Hall, Keighley	1
J. Earnshaw, M.S.A., Architect, Carlton House, Bridlington	2
Medley Hall, M.S.A., 92, Northgate, Halifax	2
W. A. Tootell, Clerk, Edware	2
Edwin Martlew, 14, Newton-road, Billinge, Lanes	2
Elijah Jones, M.S.A., 10, Albion-street, Hanley	2
W. Clement Williams, Architect, 29, Southgate, Halifax	2
T. A. Buttery and S. B. Bird, Architects, Morley	2
Holtom and Fox, Architects, Corporation-street, Dewsbury	2
J. Ladds, Architect, 78, Doughty-st., Mecklenburgh-square, W.C.	2
James Duncan and Son, Architects, Turf	2
Cecil Sharpe, Architect, 11, Old Queen-street, S.W.	2
C. E. Oliver, Architect, General Offices, Consett	2
W. N. Gable and Co., 143, Cannon-street, L.C.	2
H. W. Chattaway, Architect, Trinity Churchyard, Coventry	2
Young and Mackenzie, Scottish Provident Buildings, Belfast	2
The Shotton Colliery Offices, Co. Durham	2
F. C. Ruddle, Architect, Union Offices, Cardwell-place, Blackburn	2
E. G. Mawbey, M.I.C.E., Borough Engineer, Town Hall, Leicester	2
W. V. Gough, Architect, Bristol	2
Joseph Grant, 48, Fifth-street, Porey Main	2
W. D. Morgan, Architect, 5, Bailey-street, Ton, Porey, R.S.O.	2
Arthur Brown, M.I.C.E., City Engineer, Guildhall, Nottingham	2
The Borough Surveyor's Office, Town Hall, Rosebery-avenue, E.C.	2
J. F. Walsh and Graham Nichols, Architects, Bank Chambers, Halifax	2
William Jacques, A.R.I.B.A., 2, Fen-court, E.C.	2
Geo. Dale Oliver, County Architect, Carlisle	2
H. Winkworth, Architect, 65, Hutton-count, Ipswich	2
The Secretary, H.M. Office of Works, Storey's Gate, S.W.	2
The Engineer's Office, Hunt's Bank, Manchester	2
T. Jenkins, Architect, 35, High-street, Burton-upon-Trent	2

BUILDINGS

[illegible]

ELECTRICAL PLANT.

Motherwell—Dynamo, &c.	Electric Light Committee	James Burns, Town Clerk, Motherwell	April 24
Ashton-under-Lyne—Dynamos	Electricity Committee?	N. Appelbe, Electrical Engineer, Electricity Works, Ashton-u-Lyne	" 29
Putney & Switchboard, &c.	Municipal and Councillors	Kinnell, Waller, and Marvell, 29, Great George-street, Westminster	" 29
Albion Cables, &c.	Electric Lighting Committee	Buchan and Hogarth, Engineers, 36, Hanover-street, Edinburgh	" 30
Buttersea, S.W.—Electric Pumps, &c.	Borough Council	Kennedy and Linkin, 17, Victoria-street, Westminster, S.W.	" 30
Middlesbrough—Plant	Electric Lighting Committee	Robert Hammond, M.I.C.E., Victoria-street, S.W.	" 30
Putney—Telephone Materials, &c.	Corporation	A. R. Bennett, Telephone Engineer, 69, Ranelagh-street, Glasgow	" 30
Swansea—Wiring, &c., Guildhall	Corporation	J. Thomas, Town Clerk, Guildhall, Swansea	May 8
Manchester—Plant, &c.	Electricity Committee	Kennedy and Jenkins, Engs., 17, Victoria-st., Westminster, S.W.	" 7
Madrid—Telephone System	Spanish Post Office	The Commercial Department of the Foreign Office, Whitehall, S.W.	" 10
Buttersea, S.W.—Electric Wiring	Borough Council	W. M. Wilkins, Town Clerk, Municipal Bldgs., Lavender Hill, S.W.	" 14
Motherwell—Lamp Columns, &c.	Electric Light Committee	James Burns, Town Clerk, Motherwell, N.B.	" 18
Ludlow—Electricity Works Machinery and Plant	Corporation	John Park, Consulting Engineer, City Surveyor, Hereford	" 20
Tonbridge—Plant for Municipal Electricity Works.	Urban District Council	R. Hammond, M.I.C.E., 64, Victoria-street, Westminster, S.W.	" 30
Reading—Electric Lamp and Dynamo Works and Machinery		Butterworth and Duncan, Architects, South Park, Reading	" 30

ENGINEERING.

London District Council Corporation	J. C. Phillips, M.L.C., 241, Grosvenor House, Old Broad-street, E.C. 4	April 27
Barton Regis Board of Guardians	A. P. Entwistle, Town Clerk, Town Hall, Merton	27
Cockermouth Rural District Council	F. B. Wilson, A.M.I.C.E., 28, Baldwin-street, Bristol	27
Electric Lighting Committee	E. H. Townsley, General Manager, Gas Office, Leeds	27
Rural District Council	J. B. Wilson, A.M.I.C.E., Court Buildings, Cockermouth	27
Clyde Navigation Trustees	J. A. Bell, City Electrical Engineer, Cotton-street, Aberdeen	27
Urban District Council	J. Bell, A.M.I.C.E., 28, Baldwin-street, Bristol	27
West Ashford Union Guardians	F. Redman, Engineer, 34, Wood-street, Swindon	27
State Railway Administration	Geo. H. Baxter, Mechanical Engineer, 16, Robertson-street, Glasgow	27
Urban District Council	W. L. H. Davies, M.L.C., 63, Temple-row, Birmingham	29
Corporation	D. H. Grieves, Town Surveyor, Town Hall, Buxton	30
Corporation	B. Branniff, A.M.I.C.E., 26, London-road, Neath	30
West Ashford Union Guardians	H. A. Cutler, A.M.I.C.E., City Engineer, Municipal Buildings, Cork	30
State Railway Administration	T. and C. Hawkesley, Civil Engineers, 29, St. George-street, S.W.	30
Urban District Council	Young and Brown, 7, Southampton-st., Bloomsbury-square, W.C.	May 1
Essex County Council	The Director of Railways, Chislehurst, N.W.	1
North-Eastern Railway Corporation	F. J. Warden Stevens, A.M.I.E.E., 34, Victoria-street, Westminster	1
Urban District Council	John Frith Baslow, Engineer, Union Offices, Chesterfield	1
Essex County Council	C. A. Harrison, Civil Station, Newcastle-on-Tyne	1
Gt. Western and Gt. Central Railways Corporation	C. S. Allott and Son, Engineers, 16, Brown-street, Manchester	2
Urban District Council	Sydney Francis, Engineer, Town Hall, Clacton-on-Sea	3
Essex County Council	P. J. Sheldon, A.M.I.C.E., Chief Sur., County Offices, Chelmsford	3
Gt. Western and Gt. Central Railways Corporation	A. E. Boulter, Sec. to Joint Committee, Paddington Station, W.	3
Urban District Council	J. Bintley, Westmoreland County Surveyor, 7, Lowther-st., Kendal	4
Gasworks, Ltd.	John Scott, Town Clerk, Clacton-on-Sea	4
Bowland Rural District Council	W. Murray, Manager, Uttoxeter	4
Urban District Council	Alfred Burrow, Surveyor, Gisburn, near Clitheroe	4
Hants County Council	J. Marsh, Clerk, Council Chambers, Shanklin, I.W.	6
Lancashire and Yorkshire Ry. Co.	W. J. Taylor, County Surveyor, The Castle, Winchester	6
Pier Extension Co.	The Engineer's Office, Hunt's Bank, Manchester	7
Argentine Government	T. R. Saunders, Engineer, Belgrave Chambers, Ventnor, I.W.	8
Water Co.	The Town Council Offices, St. Edmund, St. Petersburg	8
Water Co.	The Commercial Department of the Foreign Office, Whitehall, S.W.	10
Water Co.	Wilcox and Raikes, A.M.S.I.C.E., 63, Temple-row, Birmingham	10
Water Co.	James Mansergh, 5, Victoria-street, Westminster	13
Water Co.	J. Dorman, County Surveyor, Court House, Armagh	13
Water Co.	H. T. Hare, Architect, 13, Hart-street, Bloomsbury	15
Water Co.	Sterling & Swann, C.E.'s, Town Hall, Chap-en-le-Frith, Stockport	15
Water Co.	Gwyn Lewis, Harbour Superintendent, Briton Ferry	18
Water Co.	Charles B. Newton, M.I.C.E., Engineer, Victoria Viaduct, Carlisle	25
Water Co.	The Inspector-General of Irrigation, Upper Egypt, Cairo	June 25
Water Co.	James B. Broadbent, A.R.I.B.A., 15, Cooper-street, Manchester	—
Water Co.	Barker Mitchell, Manager, Gasworks, Bangor	—

FENCING AND WALLS.

Norwich—Fence, Wall, &c., St. Andrew's Churchyard	Arthur E. Collins, M.I.C.E., City Engineer, Guildhall, Norwich ..	April 29
Brighton—Gate and Fencing, Pavilion Grounds	Francis J. C. May, Borough Engineer, Town Hall, Brighton	" 30
Abazwyndi—Boundary Walls to English Baptist Chapel	T. Havard, Esq., Abazwynd, Abazwynd	" 30
Invergarry—Fence	George Malcolm, Factor, Invergarry	May 4
Tottenham, N.—Boundary Wall, Chestnuts Recreation Ground	Urban District Council	" 7
Uxbridge—Wall and Iron Fencing to Cemetery	William L. Eves, A.R.I.C.B.A., 54, High-street, Uxbridge	" 11

FURNITURE AND FITTINGS.

Dunstable—Iron Kerb Fenders '83 at Workhouse	Guardians	F. E. Nicholson, Clerk, Balby, near Doncaster	April 27
Granton, Edinburgh—Wood Finishing to New Works	Gas Commissioners	W. R. Harrington, Chief Engineer, Newcastle Works, Edinburgh	" 29
Little Ealing, W.—Rochester House	Metropolitan Asylums Board	T. E. Duncombe Munro, Clerk, Ramsgate, E.C.	" 30
Neath—Cottages and Master's Residence	Guardians	D. M. Davies, Architect, Council Offices, Neath	" 29
Halifax—Furnishing Sunnyside School	School Board	W. H. Ostler, Clerk, School Board Offices, Halifax	May 6
Dorking—Furnishing New Infirmary	Guardians	George Seales, Clerk, 35, High-street, Dorking	" 8
Hoylake—Lavatory Fittings	Urban District Council	T. Foster, Engineer, District Council Offices, Hoylake	" 9
Ashton-under-Lyne—Fitting-Up Convenience		Burton and Percival, Architects 150A, Stamford-st., Ashton-u-Lyne	—

PAINTING.

Whitley—Wesleyan Schools, Church-street	Carby Hall and Dalby, Architects, Prudential Bldgs, Park-row, Leeds April 27	27
Stockton-on-Tees Town and Borough Hall	M. H. Sykes, Borough Engineer, Town Hall, Stockton-on-Tees	27
Poult-on-le-Felde Schools	Swire-Hartley, Engineer, Poult-on-le-Felde	27
Shethfield—Stones	Hall and Fenton, Architects, 14, St. James's-row, Shethfield	27

PAINTING

H. J. N. Evans, Master Painter, Glasgow	R. Horsfall and Son, Architects, 22A, Commercial-street, Halifax	.. 29
James R. H. Evans, Master Painter, Glasgow	The City Surveyor's Office, Durham	.. 30
James R. H. Evans, Master Painter, Glasgow	Oates-Walsh, Secretaries, Broom Top, Halifax	.. 30
James R. H. Evans, Master Painter, Glasgow	L. and J. Falconer, Architects, 27, Bank Buildings, Birmingham	.. 30
James R. H. Evans, Master Painter, Glasgow	A. Milne, Clerk, Lowther-street, Kendal	May 1
James R. H. Evans, Master Painter, Glasgow	F. Bartholomew, Clerk, Larkington	.. 1
Hunslet, Leeds—Workhouse Infirmary	Fred W. Mee, Clerk, Glasshouse-street, Hunslet	.. 1
Halifax—Two Villas	R. M. McDowell, Architect, Carlton-street, Castleford	.. 1
Halifax—Two Villas	Medley Hall, M.S.A., 92, Northgate, Halifax	.. 2
Halifax—Two Villas	The City Surveyor's Office, Town Hall, Manchester	.. 2
Halifax—Two Villas	W. Clement Williams, Architect, 29, Southgate, Halifax	.. 2
Halifax—Two Villas	W. J. Walsh & Graham Nichols, Architects, Bank Chambers, Halifax	.. 6
Halifax—Two Villas	Wm. Jacques, A.R.I.B.A., 2, Fen-court, E.C.	.. 7
Halifax—Two Villas	Walsh and Nichols, Architects, L. and Y. Bank Chambers, Halifax	.. 10
Halifax—Two Villas	The Borough Surveyor's Office, Town Hall, Dewsbury	.. 11
Halifax—Two Villas	W. Thurnall, Clerk, Brook-street, Kennington-road, S.E.	.. 15
Halifax—Two Villas	The Borough Engineer's Office, Town Hall, Northampton	.. 1
Halifax—Two Villas	Frank R. Brown, 5, Henry-street, Rotherham	.. 1
Halifax—Two Villas	The Secretary, Carshalton-road, Sutton, Surrey	.. 1

PLUMBING AND GLAZING.

Morley—Police Inspector's House, Wellington-street	General Purposes Committee	Wm. E. Putman, A.M.I.C.E., Boro' Engineer, Town Hall, Morley	April 27
Morley—Police Inspector's House, Wellington-street	Morley Town Council	C. E. Wilkinson, Architect, 35, Park-square, Leeds	.. 27
Morley—Police Inspector's House, Wellington-street	Morley Town Council	Alex. Smith, Gas Engineer, 2, Broad-street, Alnwick	.. 29
Morley—Police Inspector's House, Wellington-street	Morley Town Council	T. D. Laidley, Architect, Market-avenue, Ashton-under-Lyne	.. 30
Morley—Police Inspector's House, Wellington-street	Morley Town Council	J. W. Bradley, C.E., Boro' Eng., Town Hall, Wolverhampton	May 1
Morley—Police Inspector's House, Wellington-street	Morley Town Council	James Lead, C.E., Boro' Engineer, Town Hall, Halifax	.. 1

ROADS AND STREETS.

Whitley, Street Works	Whitley and Monkseaton U.D.C.	J. P. Spencer, A.M.I.C.E., Surveyor, 39, Howard-st., North Shields	April 27
Maiden, Essex—Road Report & Estimate	Urban District Council	H. G. Keywood, C.E., Dist. Sur., Public Hall Chambers, Maldon	.. 27
Maiden, Essex—Road Report & Estimate	Rathfriland Parish Council	John Aleck, Surveyor, Keith	.. 27
Maiden, Essex—Road Report & Estimate	Cooperation	J. E. Swindlehurst, M.I.C.E., City Eng., St. Mary's Hall, Coventry	.. 29
Maiden, Essex—Road Report & Estimate	Cooperation	The Borough Engineer, Harrogate	.. 29
Maiden, Essex—Road Report & Estimate	Borough Council	W. Oxboby, Borough Engineer, Town Hall, Camberwell	.. 29
Maiden, Essex—Road Report & Estimate	Borough Council	John Bowden, C.E., Surveyor, 14, Ridgefield, Manchester	.. 29
Maiden, Essex—Road Report & Estimate	Borough Council	John Griffiths, Clerk, Noyland	.. 30
Maiden, Essex—Road Report & Estimate	Borough Council	S. S. Platt, M.I.C.E., Borough Surveyor, Town Hall, Rochdale	.. 30
Maiden, Essex—Road Report & Estimate	Borough Council	The Borough Engineer's Office, Town Hall, Salford	.. 30
Maiden, Essex—Road Report & Estimate	Borough Council	W. B. Garton, Surveyor, 25, Sefton-road, Litherland	May 1
Maiden, Essex—Road Report & Estimate	Borough Council	W. Harston, Surveyor, High-street, Dartford	.. 1
Maiden, Essex—Road Report & Estimate	Borough Council	J. Henry Taylor, M.I.C.E., Boro' Sur., St. Mary's-place, Barnsley	.. 1
Maiden, Essex—Road Report & Estimate	Borough Council	H. H. Scott, Borough Surveyor, Town Hall, Hove, Sussex	.. 1
Maiden, Essex—Road Report & Estimate	Borough Council	Richard Collins, Surveyor, Court House, Enfield	.. 1
Maiden, Essex—Road Report & Estimate	Borough Council	C. E. Oliver, Architect, General Offices, Consett	.. 3
Maiden, Essex—Road Report & Estimate	Borough Council	Charles Greston, Surveyor, Council Chambers, Alveston	.. 4
Maiden, Essex—Road Report & Estimate	Borough Council	Wm. F. Dewey, Town Clerk, Town Hall, Upper-st., Islington, N.	.. 6
Maiden, Essex—Road Report & Estimate	Borough Council	E. J. Lovegrove, Engineer, 99, Southwood-lane, Highgate, N.	.. 6
Maiden, Essex—Road Report & Estimate	Borough Council	Charles E. Wandlaw, Civil Engineer, 112, Bath-street, Glasgow	.. 6
Maiden, Essex—Road Report & Estimate	Borough Council	G. Eaton-Shore, Borough Surveyor, Earle-street, Crewe	.. 6
Maiden, Essex—Road Report & Estimate	Borough Council	A. Holden, M.I.C.E., Council Offices, Cross-street, Hindley	.. 13
Maiden, Essex—Road Report & Estimate	Borough Council	Arthur E. Collins, M.I.C.E., City Engineer, Guildhall, Norwich	.. 18
Maiden, Essex—Road Report & Estimate	Borough Council	F. and W. Stocker, Surveyors, 90, Queen-street, Chelmside, E.C.	.. 22
Maiden, Essex—Road Report & Estimate	Borough Council	The Commercial Department of the Foreign Office, Whitehall, S.W.	.. 29
Maiden, Essex—Road Report & Estimate	Borough Council	A. Sykes, Architect, 45, Finsbury Pavement, E.C.	.. 29

SANITARY.

Leeds—Sewage Work	Cockermouth Rural District Council	J. B. Wilson, A.M.I.C.E., Court Buildings, Cockermouth	April 27
Leeds—Sewage Work	Urban District Council	Hindell and Murphy, M.I.C.E., 41, Corporation-st., Manchester	.. 27
Leeds—Sewage Work	Urban District Council	John Atkinson, A.M.I.C.E., Boro' Sur., St. Petersgate, Stockport	.. 29
Leeds—Sewage Work	Urban District Council	W. P. Perkins, Surveyor, District Council Offices, Witham	.. 29
Leeds—Sewage Work	Urban District Council	Sir Samuel Black, Town Clerk, Belfast	.. 29
Leeds—Sewage Work	Urban District Council	S. W. Parker, Surveyor, Council Offices, Thornhill, near Dewsbury	.. 29
Leeds—Sewage Work	Urban District Council	John Fry, Clerk, Saxmumdhun	.. 29
Leeds—Sewage Work	Urban District Council	W. R. Copland, Engineer, 146, West Regent-street, Glasgow	.. 29
Leeds—Sewage Work	Urban District Council	W. Oxboby, Borough Eng., Town Hall, Pockham-road, Camberwell	.. 30
Leeds—Sewage Work	Urban District Council	W. Banks, Clerk pro. tem., Council Offices, Heaton Moor, Stockport	.. 30
Leeds—Sewage Work	Urban District Council	Fairbank and Son, C.E., 18, Lendal, York	May 1
Leeds—Sewage Work	Urban District Council	J. W. Bradley, C.E., Boro' Engineer, Town Hall, Wolverhampton	.. 1
Leeds—Sewage Work	Urban District Council	H. Alex. Clarke, Engineer, Council Offices, Bruton Ferry	.. 1
Leeds—Sewage Work	Urban District Council	G. E. Beaumont, Engineer, Grenoside, near Sheffield	.. 2
Leeds—Sewage Work	Urban District Council	C. F. Wike, C.E., City Surveyor, Town Hall, Sheffield	.. 2
Leeds—Sewage Work	Urban District Council	J. H. Brierley, Borough Surveyor, Town Hall, Richmond	.. 3
Leeds—Sewage Work	Urban District Council	W. J. Taylor, County Surveyor, The Castle, Winchester	.. 6
Leeds—Sewage Work	Urban District Council	W. Wyatt, 99, Radford-road, Leamington	.. 13
Leeds—Sewage Work	Urban District Council	C. G. Barnett, Clerk, Town Hall, Ilfracombe	.. 14
Leeds—Sewage Work	Urban District Council	Bessley, Son, and Nichols, Engineers, 11, Victoria-street, S.W.	.. 15
Leeds—Sewage Work	Urban District Council	The Architect's Department, County Hall, Spring Gardens, S.W.	.. 17
Leeds—Sewage Work	Urban District Council	J. Powell, 4, King-street, Wakefield	.. 17
Leeds—Sewage Work	Urban District Council	Burton and Percival, Architects, 150A, Stamford-st., Ashton-u-Lyne	.. 17

STEEL AND IRON.

Leeds—Sewage Work	Urban District Council	A. W. Elton, Engineer and Manager, Littlehampton	April 29
Leeds—Sewage Work	Urban District Council	T. and C. Hawesley, C.E.S., 30, Great George-street, S.W.	.. 30
Leeds—Sewage Work	Urban District Council	The Director-General of Stores, India Office, Whitehall, S.W.	.. 30
Leeds—Sewage Work	Urban District Council	Edward Thompson, Engineer, Grange	.. 30
Leeds—Sewage Work	Urban District Council	The General Manager, Commercial-street, Sheffield	.. 30
Leeds—Sewage Work	Urban District Council	The Director-General of Stores, India Office, Whitehall, S.W.	.. 30
Leeds—Sewage Work	Urban District Council	C. A. Fielder, Secretary, Brentwood	May 8
Leeds—Sewage Work	Urban District Council	A. Brown, M.I.C.E., City Engineer, Guildhall, Nottingham	.. 6
Leeds—Sewage Work	Urban District Council	The Joint Engineers' Office, Woodside Station, Birkenhead	.. 19
Leeds—Sewage Work	Urban District Council	Millars' Kurri and Jarrah Forests	.. 19

STORES.

Leeds—Sewage Work	Urban District Council	H. G. Himson, Surveyor, Theatre-street, East Dereham	April 27
Leeds—Sewage Work	Urban District Council	Edmund Birks, District Surveyor, Town Hall, Uxbridge	.. 27
Leeds—Sewage Work	Urban District Council	The Surveyor, 11, Church-street, Colne, Lancs	.. 27
Leeds—Sewage Work	Urban District Council	F. H. Gillies, Secretary, St. Enoch Station, Glasgow	.. 29
Leeds—Sewage Work	Urban District Council	P. H. Palmer, M.I.C.E., Boro' Engineer, Town Hall, Hastings	.. 29
Leeds—Sewage Work	Urban District Council	Geo. Lapwood, Highway Surveyor, North-street, Romford	.. 29
Leeds—Sewage Work	Urban District Council	Geo. H. Gisby, Clerk, Union Offices, Town Hall, Ware	.. 30
Leeds—Sewage Work	Urban District Council	Robert Hammond, M.I.C.E., 64, Victoria-street, Westminster, S.W.	.. 30
Leeds—Sewage Work	Urban District Council	J. Griffiths, Surveyor, Porth House, Porth	.. 30
Leeds—Sewage Work	Urban District Council	D. J. Diver, Surveyor, Desborough	May 1
Leeds—Sewage Work	Urban District Council	C. W. Young, Secretary, Nicholas-lane, E.C.	.. 1
Leeds—Sewage Work	Urban District Council	Thomas M. Hobbs, Clerk, Gainsborough	.. 2
Leeds—Sewage Work	Urban District Council	William Terrill, North-street, Ashford, Kent	.. 3
Leeds—Sewage Work	Urban District Council	J. Robinson, Surveyor, Hasland, Chesterfield	.. 3
Leeds—Sewage Work	Urban District Council	W. Burton, Road Surveyor, Buntingham	.. 4
Leeds—Sewage Work	Urban District Council	E. A. Stickland, Borough Surveyor, Alma-road, Windsor	.. 4
Leeds—Sewage Work	Urban District Council	J. Boyd, Clerk, Town Hall, Carrickfergus, Ireland	.. 6
Leeds—Sewage Work	Urban District Council	L. J. Veit, Surveyor, Council Offices, Chapel-street, Goole	.. 6
Leeds—Sewage Work	Urban District Council	The City Surveyor, Ripon	.. 7
Leeds—Sewage Work	Urban District Council	Snowell, Town Surveyor, Chiden House, Boston-road, Brentford	.. 7
Leeds—Sewage Work	Urban District Council	J. A. Shepard, Clerk, Town Hall, The Circle, Tinsley, Mon	.. 7
Leeds—Sewage Work	Urban District Council	John A. Byrne, Secretary, 61, New Broad-street, E.C.	.. 8
Leeds—Sewage Work	Urban District Council	William Morgan, Clerk, 4, Martin-street, Stafford	.. 9
Leeds—Sewage Work	Urban District Council	Thomas Young, Surveyor, John-street, Sunderland	.. 10
Leeds—Sewage Work	Urban District Council	The Secretary's Office, Liverpool-street Terminus, E.C.	.. 14
Leeds—Sewage Work	Urban District Council	S. J. L. Vincent, Borough Surveyor, Town Hall, Newbury	.. 14

THE BUILDING NEWS

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ARCHITECTURE AT THE ROYAL ACADEMY. I.

THE first Academy Exhibition of the new century can hardly be said to be marked by any work of exceptional originality. At any rate, this is the case in the gallery devoted to Architecture, where we miss several old contributors. Taken as a whole, the collection may, however, be described as a respectable average gathering more than ordinarily free from commonplace things, and including works of very varied types, chiefly perhaps of a commercial, municipal, or educational character. Ecclesiastical design is by no means in strong force, with the brilliant exception presented by four out of the five drawings exhibited by Mr. G. F. Bodley, A.R.A., at the end of the room. Herein, at any rate, Mediæval methods and a living style of Christian architecture find a capable and refined exponent, true to English Gothic art, devoid of meretricious strivings after mere novelties, and yet modern and adapted to the needs of Divine worship as understood by the school of Churchmen these buildings are intended for. The drawings, indeed, are very unlike the perspectives of a quarter of a century ago, and the tints adopted in these interiors by Mr. J. J. Jones are, we presume, considered up-to-date, with much mannerism of watery reflections and accidental incidents of colour. The architectural lines are, nevertheless, well put in, and the decoration of the roofs, always so marked a feature in Mr. Bodley's well-finished churches, are suggested with precision and taste, even if looking in a desired effect of aerial perspective. We publish the exterior shown by this accomplished architect of the new tower lately built by him to the famous church of Long Melford, Suffolk, one of the richest examples of East Anglian flintwork extant. Time will mellow the new addition, which is entirely in keeping in character with the historic work to which it has been added in place of the poverty-stricken old brick tower which for some generations had disfigured the west end of Long Melford nave. The new Church of All Saints has been designed by Mr. Bodley for a parish at South Kensington, near the Albert Hall. The nave has double aisles on one side, and stone arches span the nave aisles, the church being schemed to cover the whole site. Its main features are its lofty columns and large traceried windows, broadly handled, the roof being continuous from east to west, a rich screen without a rood inclosing the choir. The second interior is of St. Matthew's, Chapel-Allerton, Leeds, recently finished,* with its nave of six wide bays and decorated roof in gold and colour. The organ stands on the choir-screen in its ancient position, high above the loft, affording acoustic advantages well recognised, though now seldom adopted. The tall, narrow proportions of the instrument are presumably due mainly to the intention of not needlessly curtailing the view of the chancel and east window, which an organ in this position must necessarily obscure. The third perspective represents the red-stone and vaulted church of St. Mary, Ecclestone, which, like the others named, has a rich traceried chancel-screen and pulpit elaborately decorated.

Hayes Lodge, by the same architect, built in red sandstone, in Derbyshire, at

Morley, is a large house of quiet Late Tudor type, hardly done justice to by this perspective. The deeply-recessed bays, all mullioned and transomed, are replete with good effects inside, where there is a considerable amount of oak panelling heightened with heraldic glass in the glazings. The gardens are in keeping with the house, though this pencil study hardly gives this idea.

Facing this group of drawings in a corresponding position at the far end of the room is a large frame of elevations by Mr. T. Graham Jackson, R.A., of a series of buildings in Downing-street, for the University of Cambridge, comprising the Squire Law Library, the Law School, and the Sedgwick Memorial Museum, done in red brick and stone in a quiet, capable way, not particularly fresh or spirited in design, and archaeologically handled in a strictly scholastic manner, and only but indifferently drawn in elevation.

Mr. Aston Webb, A.R.A., occupies a post of honour facing the entrance to the gallery with his drawing, which we illustrate to-day, of the Sick Quarters of the Naval College at Dartmouth, of which institution we gave views the year before last.* The plan accompanying the view published herewith shows the position of these infirmary buildings in respect to the college, and the detailed plan shows its internal arrangements, with the connecting corridors between the three pavilions, which are designed in a plain treatment of red brick and stone. Features are made of the arched balconies facing the south-east. Mr. Aston Webb's second exhibit is a capitolally-delineated detail of the main front of the Victoria and Albert Museum Buildings erecting at Kensington. The drawing shows much refinement of a type of Burgundian Renaissance detail which the author has carefully elaborated, but without being enabled to compare the original composition with the work here represented, it is impossible to indicate the precise changes which may have been made; neither is it possible to judge of the effect of the whole from the bay thus shown. Segmental columns recessed as shafts form the piers between the ground-floor windows, and above are figures within niches, spaced with the scheme of fenestration. Crowning this is a deep brick filling, or frieze, crowned by a blocked cornice divided into bays by cartouche shields placed immediately in line with the piers below. Large scale elevations of parts of buildings are of much interest to architects, and make welcome exhibits to that extent in the Academy Exhibition; though at best they are but caviare to the multitude.

The designs for the New Courts in the Old Bailey form conspicuous exhibits, naturally, in the present show. Mr. John Belcher, A.R.A., sends his perspective, which is already familiar to our readers (see BUILDING NEWS, July 6, 1900), and Mr. E. W. Mountford shows the view of his selected design (see BUILDING NEWS, June 29, 1900), together with a fresh interior view of the main hall. The plans on which the choice depended are absent, so that it scarcely appears from what is seen at the Academy why preference was by universal consent accorded to Mr. Mountford. It is a matter for regret that the work has not yet been started, considering the unsanitary and confined character of the existing buildings, the work of the Central Criminal Courts having considerably outgrown the accommodation they afford. Mr. Baggallay exhibits his design for the same work also.

We do not know whether the offices in Mark-lane, exhibited by Professor Aitchison, A.R.A., were built during the "sixties," when Messrs. Aitchison and Son, of Muscovy-court, carried out some mercantile premises

in that street, or whether the subject of the present water-colour has lately been erected. Its style, in the latter case, possibly, has perforce been made to accord with some earlier adjoining work conceived in the same sort of semicircular arched style which about forty years ago was associated with the buildings of Messrs. Deane and Woodward. The exhibit is thus, to the uninitiated, somewhat perplexing, for the perspective in watercolour is seemingly a new one, with figures grouped cleverly, evidently by an artist's brush.

Mr. T. E. Colclutt sends a general view of Lloyd's Register of Shipping, built in Fenchurch-street, and of which two drawings were exhibited last year. The figure sculpture is but indifferently shown in this picture, so that it hardly takes its real place in the composition, as no doubt it will do in the actual work. This is a matter of regret, particularly as the metal and ivory frieze for the marble vestibule shown by Mr. Lynn Jenkins in the lecture hall at the Academy (1791) indicates the beauty of the sculptor's art employed in this building. The façade seems to end abruptly to the right-hand side, judging by this study, though the design is broader and more massive in style than Mr. Colclutt has generally adopted. The absence of Mr. Alfred Waterhouse, R.A., in the Architectural Gallery cannot be passed over without comment, and we miss his masterly water-colour drawings. He has an oil landscape, "From My Gate," in room No. 6, painted with much skill in an unfamiliar medium for him. Mr. Ernest George's single work this year, a Crematorium erecting at Finchley for North London, is hung rather high, and does not appear to be exceptionally interesting architecturally, apart from its subject. It is treated in an Italian manner in brick with a campanile and cloister.

The first prize design for the Assembly Hall at Belfast, by Mr. Rupert Savage (illustrated by us this week), is deservedly well placed, and on the same wall we are interested in a new drawing displayed by Messrs. Ernest Runtz and Co., of their design for the New Gaiety Theatre, as part of the scheme they unsuccessfully submitted for the London County Council's Strand Improvement Scheme, and for which Mr. H. T. Hare's designs were ultimately determined on. As to how the difficulty of combining Mr. Runtz's plan with Mr. Hare's façade will be overcome remains to be seen, for it is not easy, even for the L.C.C., "to run with the Hare and hunt with the hounds" so to speak. Mr. Runtz, as the architect to the Theatre Company, appears to be in possession. Mr. Flockhart has hung over the last-named study a new monochrome view of his design for the Gaiety end of this same Strand Improvement Scheme; but though made to look handsome, the composition conflicts strongly with St. Mary-le-Strand Church, and contrasts forcibly with the quiet dignity of Sir William Chambers's work over the way at Somerset House. In the angle bay close by these drawings is an inexplicable and weakly-outlined representation of a bronze screen inclosing a group of figure sculpture, shown by no less a personage than Mr. Hamo Thornycroft, who has signed the drawing. The subject is the canopy round the Dean Colet Memorial, St. Paul's School, Hammersmith; but anything more deplorably poor and clumsily designed it would be hard to conceive. The foliations are based upon Gothic forms, but they grow awkwardly in a cap-like fashion out of the thin uprights in a tasteless way, supporting conical roofed niches out of all character with metal, and only show what bad design even a great sculptor can do when he makes an essay in a material and type of work other than his own. Mr. William Emerson, the President of the Royal Institute of British Architects, ex-

* An exterior of this church from the Royal Academy appeared in the BUILDING NEWS for January 6, 1899.

* See BUILDING NEWS, May 5, 1899.

We have perforce omitted several import-

Mr. Herbert Draper this year illustrated an episode from the story of "Tristram and Isuelt." Those who know the story will remember that the beautiful princess of Ireland cured Tristram after being wounded in a duel, and, after returning to Cornwall, told his uncle, King Marke, his guardian, who at once solicited her hand in marriage, and was accepted. The painter shows the princess on her way to be married to King Marke of Cornwall, and she is seen on the deck of the ship under Sir Tristram's charge. Isuelt's mother had prepared for her daughter's nuptials a magic love-potion, and this potion

secretly committed to the charge of a fisherman, who is seen asleep on the deck, and discovered by Tristram, who, drinking wine, drives it with a fish, and the moment taken by the painter is what the preponderant passion. Love, is asserting its power in spite of Tristram's struggles to subdue himself. Another story is that the Princess was married to the King of Cornwall, but was in love with the nephew, with whom she had guilty connection. Mr. Draper's work is imbued with much power of subtle suggestion, and there is a hint of colour. The green cloak of the Princess and the purple dress of her sleeping maid are notes of colour in this ably-composed picture.

Walter Langley, another of the Cornish or Newlyn School, contributes "Between the Tides," one of his inimitable subject-pictures, in which the life of the Cornish fisher is depicted with wonderful truthfulness and feeling. Less pathetic than his last year's picture, "A Signal of Distress," we are constrained to notice the technical qualities of drawing and colour. There is a healthy sentiment in this everyday picture of real life by the sea, with its silvery white light on a grey day. The old fisherman descending the steps to the beach, lingering to chat to a group of women who lean over the railing, homely enough in its incident, but told with a directness and a simplicity that awaken a sense of sympathy. The leaning figure of the young woman in pink blouse and three other figures, the boy and old woman with basket looking down on the beach, make a clever group admirable in drawing and expression.

The great work at the end of the Third Gallery will appeal to the public taste. It represents Queen Victoria seated on her throne in the House of Lords, a queenly and dignified figure. Her arms rest on the chair. In her right hand she has a fan. A gleam of sunlight illumines her face and bust, and falls on the rich red carpet and panelling. The painter, Benjamin-Constant, is one of the ablest modern painters, whose portraits are held in high esteem for their drawing, colour, and picturesque setting. For the picturesque splendour of Eastern subjects, the jewels and silken draperies of beautiful women, M. Constant has won high repute. The light and shade are strongly depicted, and there is a rich harmony of golden hue on the gilded chair, the shafts, and statuettes of the architectural background. By throwing the light on the face of the Queen, the painter has given prominence to the face of her Majesty, the ribbon of the order and the white lace shawl being in full light, while the other part of the figure is subdued. There is restraint; but considerable light on the picture is needed to make it effective.

The President's chief work is "Helena and Hermia" (169), a scholarly work. The two maidens are seated on a marble bench within a trellis of myrtle, and pine trees form a background, with a blue sea and hills. Helena and Hermia are looking at a sampler, on which a border of flowers are worked. There is grace and refinement in the composition and colour of the draperies, though it suffers rather from hardness, and the colouring is cold. Above it John da Costa (170) illustrates an episode from Spencer's "Faery Queen," Canto VIII.

And first they spake her of her jewels here,
And afterwards of all her rich array.

"Serena Captive" is the title given to this painter's very artistic composition. The dark bronze-coloured fawning men who are despoiling the queen are cleverly arranged, while the rich red silken draperies of golden and pinkish hue give a rich note of colour to the composition. We admire chiefly the grouping and subtle form and colour.

Peter Graham's "A Mountain Torrent" has all the power and wonderful atmosphere and colour which distinguish his landscapes.

THE SPECIAL MEETING OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

ON Monday the 30th inst. a special meeting of the Institute was held to consider the National Memorial to her late lamented Majesty Queen Victoria, which was held by Mr. William W. Anderson, in view of the open competition for the National Memorial to be erected in St. James's Park in memory of the late Queen.

Mr. E. A. Crompton, Vice-President, occupied the chair. A letter was read from the President, who was unavoidably absent, saying that three courses had been discussed by the Memorial Committee—viz.:—(a) To appoint an architect to design the work; (b) to have an open competition; and (c) to invite five architects to compete. The last course was adopted, as is everybody knows. Mr. MAYNARD ANDERSON, Past-President, went at length, giving his reasons for objecting to any protest being made on behalf of the R.I.B.A. in an official form. He remarked:—"The very last body which should express such views as are embodied in the resolutions to be submitted this evening is the Royal Institute of British Architects, for its duty would be tantamount to asking that its members who have not been invited to submit suggestions should be permitted to do so. Anything not originated, and I must profess, I cannot conceive."

Other letters were read, giving individual opinions, but these were of no special moment, one architect from Birmingham objecting to Messrs. Aston Webb and Bell having been appointed architects for the new University Buildings in that city, without the local architects having been allowed to compete.

Mr. WOODWARD advocated his resolutions, which were seconded by Mr. ERIC MARSHALL. Professor BERKESTED PIERCE proposed the following amendment, which was ultimately adopted by a large majority, only four raising their hands in dissent in a meeting of seventy-five members, Mr. Woodward having expressed his willingness to accept the amendment instead of the original motion.

That, considering the deep and widespread interest manifested throughout the Empire in the proposed National Memorial to her late lamented Majesty Queen Victoria, and in view of the limited opportunities for the exercise of monumental design in London that have been offered during recent years, and the absence of useful precedents, this special general meeting of the Royal Institute of British Architects, of which her late lamented Majesty was patron throughout her long reign, respectfully urges upon the executive committee of the National Memorial its earnest conviction that designs should be invited in open competition from all British architects for this most important and unique monument, which, it hopes, would thus become representative of the best and most enthusiastic efforts of modern monumental architectural art. And, further, this meeting would suggest to the executive committee the necessity of affording sufficient time for the preparation and submission of designs by architects resident in all parts of the empire, of whom many are members of this Royal Institute.

The discussion was spirited, and the idea of an open contest was warmly advocated by several members. The absence from the meeting of some whose opinions might carry weight with those in authority, was very noticeable, and much to be regretted, seeing the invidious position in which the Institute, as a body, is placed by the passing of such resolutions, owing to the fact that its President, as such, was elected on the Memorial Committee, and has taken part in its proceedings. Any public protest on the part of the Institute ought, we should think, not to have been ignored by leading members of the Institute itself. The position at present is an undignified one; but that, unfortunately, is not a new thing at Conduit-street!

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE report of the Council for the official year 1900-1901, to be submitted to the annual general meeting on Monday evening next, states that the present subscribing membership of the Institute is 620 Fellows, 1,013 Associates, and 45 Hon. Associates, giving a total of 1,678 members, as against 621 Fellows, 1,028 Associates, and 46 Hon. Associates, or 1,696 in all, at the corresponding period in last year, thus showing a slight falling-off in numbers in each class. Since the last annual general meeting 29 Fellows have been elected, 46 Associates, 3 Hon. Associates, and 1 Hon. Fellow. Two Hon. Corr. Members have been elected. The Council attribute the absence of an increase in membership in the class of Fellows to the more than usually heavy

losses by death, by resignation, and by transfer to the class of Retired Fellows, and by other removals from the body.

There have been twenty Fellows, three Associates, and three Hon. Associates. The annual preliminary examinations were held in June and November, 1900, and the council report a steady increase in the number of candidates for each of the examinations. The Preliminary and Intermediate were held in London, Brighton, Bristol, Cardiff, Manchester, Newcastle, Nottingham, and York, and the Final and "Special" examinations were held in London only. The results are as follows: There were seven candidates during the year for the "Special" Examination for Architects in Practice over 25 years of age and Chief Assistants over 30, of whom six passed. In the Preliminary Examination 67 were accepted, 316 examined, 256 passed, 80 were relegated—making a total of 383. In the Intermediate Examination, 122 were examined, of whom 77 passed, and 45 were relegated; and in the Final and Special Examinations 98 were examined, 47 passed, and 51 were relegated. The total number of candidates examined during the year was 663, as against 418 in 1900. The number of Probationers of the Institute now stands at 1,507, and of Students at 368. The Council also report that the Ashpitel prizes for the best specimen of survey (supplemented by certain specified sheets of drawings) submitted by students for admission to the final examination have not been awarded this year, no student who had passed the examination having fulfilled the conditions. The Ashpitel prize has been awarded to Mr. Shirley Harrison, who passed the final examination in November, and extra prizes to Messrs. C. E. Vandell and Hedon Conyon. The "special" examination will be held this June in Sydney and Montreal. The collection of paintings of the Royal Institute has been enriched by a portrait of Professor George Aitchison, R.A., past-President, by Sir Lawrence Alma-Tadema, R.A. The portrait is being exhibited at the Royal Academy this year. The council record the fact that the President, Mr. William Emerson, is a member of the advisory sub-committee of the general committee on the question of the national memorial to her late Majesty; the President was also a member of the art committee of the Royal Commission for the Paris Exhibition 1900. A most important event in the year was the General Architectural Congress held in London, under the administration of the Institute, from June 18 to 25. The meetings and the visits were well attended, and considerable public interest was aroused. The Council have been invited by the authorities of the Glasgow International Exhibition, 1901, to contribute to the Fine Art Section an exhibit from the collections of the Royal Institute, a bay in one of the galleries being placed at their disposal. The Council have complied with the request, and have sent the portraits of Professor Cockerell, Sir Gilbert Scott, and Mr. F. C. Penrose; marble busts of Inigo Jones, Sir Christopher Wren, Sir Charles Barry, and George Edmund Street; and a large number of drawings. The R.I.B.A. annual dinner will be held this year in Glasgow, on Thursday, October 3. The Council refer to the long negotiations last year with the London County Council with reference to the Holborn-to-Strand improvement scheme: to the alteration in the steps of St. Martin's Church, against which they unsuccessfully protested; and to the fact that the London County Council submitted for the opinion of the Council their draft by-laws under the Metropolitan Management Acts as to the disposal of plans with reference to pipes, drains, and other means of connecting with sewer. The main suggestion of the Council was that, in lieu of elaborate duplicate plans and sections which it was proposed that any one about to construct or reconstruct drains, &c., should deposit with the sanitary authority, it would be sufficient if one carefully-prepared block plan were sent. The council have addressed a protest to the Ecclesiastical Commissioners and Lords of the Privy Council against the Union of Benefices Bill as drafted when introduced before Parliament last year. They urged that this Bill to extend the Union of Benefices Bill, 1880, to the whole of England and Wales should contain provisions whereby precious architectural monuments should be safeguarded against the destruction that has been permissible and practised in London under the provisions of the existing Act. The Council adopted the report of the science committee on the new regulations proposed by

Susa originally known as Segusio was the capital of Cottius—a famous king ruling over several of the Alpine valleys, and who, with much politic foresight, resigned his sceptre to the Roman emperor Augustus, who, in recognition of his submission, at once made him Prefect. There is an exceedingly fine triumphal arch, of Roman date, still standing in excellent preservation at Susa, erected about a.d. 21 to record this historical event. Pompey (chosen Consul a.d. 70, died a.d. 48) is reputed to have been the first to cut a road over Cenis. It was, albeit, a mere bridle path, which, however, from his far away days, until the beginning of last century, was so narrow that it could only be used by horsemen and foot travellers. It was Napoleon, in 1811, who determined to make the pass available alike for artillery and carriages. The Ca-

Giovanni Fabbroni, a celebrated engineer in his day, undertook the work, and by the help of some three thousand workmen, the present splendid road was completed in less than six months. A gigantic task, indeed, quite as great, especially in its day and generation—nearly 100 years ago—as is the Assuan Dam on the Nile. The extreme height of Mont Blane is 15,781ft., and that of the loftiest peaks on Cenis 11,620ft. But the actual pass goes through a comb, not over the top, and is only 5,898ft. above the level of the Mediterranean Sea, which casts up her blue waters at Nice, exactly 100 miles away due south. Of course, when we compare this altitude with our own pyramides—Snowdon, which is 3,571ft., and Ben Nevis, whose topmost rock towers up 4,371ft., only, the pass seems a somewhat high one. Yet, after all, it is very little loftier than is the greater part of the Transvaal. South Africa, as most readers, by this time, are aware, may be compared, in section, to half an inverted saucer. It slopes up every way from the sea-board, and is, practically, all table land upon the top. Johannesburg, that over-praised city—so boastfully and wrongly referred to by South Africans as the “African Chicago,” and which had no sort of existence until considerably less than 20 years ago, is situated upon a plain 5,689ft. above the sea level, so that the highest part of the Mont Cenis pass is only 209ft. higher. This addition would be about the height of a decent church steeple. All through the Transvaal, water is carried about in canvas bags. These haversack-like affairs have a small tap, near their bottom, through which the cooling liquor is drawn. In point of fact, these bags take the place of the “firkins,” that parched Devonshire “dumplings” drink their cider out of. It is, of course, the rarefied condition of the air, at the altitude the Transvaal is situated in, that makes this old portability possible. I have never noticed the inhabitants of elevated positions in Europe do legs in the same manner, but assume there is no reason why they should not do so?

Travelling on in Piedmont and Savoy, certainly in the days to which I refer, was a very economical way of getting through the country. A good late dinner and wine, together with a comfortable bed all to one's self, rarely cost more than sixpence inclusive. On arriving, wearied and tired, I saw, I think, the first of the signs known as the “Good Woman.” This popular sign is of Dutch origin, and certainly dates back to the early part of the 17th century. It seems to have been adopted by several countries, inclusive of our own. We are all familiar with Hogarth's celebrated picture entitled “Noon.” There, upon the sinister side, is seen the public-house, known as the “Good Woman,” the painted sign showing a lady minus her head. On the first floor of this self-same hostel a gentleman and his wife have had an evidently furious quarrel over their Sunday dinner, consisting of baked shoulder of mutton, with baked potatoes under; and the lady, as the result thereof, is in the act of flinging meat, dish, potatoes, and all out of the window. The church upon the other side of the way is, of course, that of St. Mary of the Greeks, then situated in Hog-lane, Soho, W. It was built in 1675 by George II., Archbishop of Samos, and was afterwards converted into a Huguenot chapel. Whilst it was thus occupied it was introduced by Hogarth into his painting. The roof of old London was pulled down in 1898 to make way for those “modern improvements” so much required in the neighbourhood. The spot seen in the background of the same picture is that of the old church of St. Giles, which was pulled down in 1734, at a cost of £10,000, Mr. Henry Flitcroft being the architect. The sign of the “Good (or Silent) Woman,” has sometimes the following lines painted upon the walls:

Here you see the good woman,
Full fully painted on the
Nothing is better, but her head,
Because that she is not with every wind,
It is the best, but not the best,
She would not have been good for all her life.

There used to be an old inn known by this sign lived by where I live in Essex. I remember another years ago named the Quiet Woman at Haddock in Dorset. There is also a hostel named the Silent Woman at Bisham in Wiltshire, and another at Wilford near Chelmsford, whilst a village inn near Sevenoaks, I recollect, was known as the Goode Woman. In Paris the subject gives the name to a whole street—viz., *Rue de la Femme sans Tête*.

And now, as space has already been somewhat trespassed upon, the actual adventures met with whilst crossing Mont Cenis itself must be reserved until another week.

(To be continued.)

EIGHTEENTH-CENTURY ARCHITECTURE OF BATH.

(Continued from page 557.)

QUEEN-SQUARE was in reality Wood's chief delight. The first side built was that on the east, which was begun in 1728. The whole was finished in seven years' time, including the chapel and many houses adjacent. The ground was originally intended to be level from top to bottom, but to save expense was afterwards allowed to slope southwards. The centre was to have a low inclosing wall bearing a balustrade, inside this a border of flowers, and then a basin of 45ft. diameter supplied with water from a spring close by, but which was soon intercepted by someone who “penetrated the ground for vaults in the very line of it.” Espaliers of elm and lime trees inclosed the four quarters, and within were flowering shrubs. The diagonal walks were covered with turf and the other walks with gravel. The basin in the middle had an obelisk 70ft. high rising out of it. Wood confesses that this square when planted somewhat obstructed the view from the opposite sides the houses. The width of the square from house to house is about 315ft. The grand façade, as we may call it on the north of the square, was to be as it were a palace, and the east and west sides the wings. The vases on the pediment have disappeared. The original intention is shown in the plate from his own book. The design, as usual with him, was a simple one—a rusticated basement with the Corinthian order over and a large crowning cornice, just as in Ralph Allen's house, and yet from its treatment so different in effect as was fitting to a widely-extended façade such as this. A bronze tablet has been lately put up on the centre house to mark the residence of the elder Wood. It was here that he died on May 23, 1754, and here also his widow deceased some twelve years later. There was no shirking of finish in the case of John Wood's builders, though the work was often of a speculative nature. The east wing was completed with little alteration from the original design, but the west had to be altered in order to get the building taken up, and it was divided into three main blocks, the centre one being treated with the Ionic order, and having a decidedly Greek feeling about it. At the south-west angle of Queen-square stood the Chapel of St. Mary. Ionic capitals from the interior yet remain on the site of the chapel. On March 25, 1732, at Mr. Gay's request, Wood laid the first stone, and the work was pushed forward and completed at the end of 1734. The inside was of the Ionic order, 67ft. long, 18ft. broad, and 50ft. high the outside of the Doric order, and the whole structure, with its furniture, cost about £2,000. In 1729 Wood built a villa called Eagle House at Bathaston, where he lived for some time. The house has been much altered, but a fine original doorway now remains, which has been applied to the south side of the house. The head on the keystone is that of Queen Caroline, wife of George II. An eagle carved in stone surmounts the frontage to the road. The younger Wood died here in 1781. While mentioning the works of Wood outside the city, it will be well to include two or three more houses which he built at various times. The little house called Lilliput Castle was built by Mr. Jerry Pierce, in the year 1738, against the north end of Mons. Badonca—that is, Lansdown, and formed the nucleus of what is now known as Battlefields, standing about a quarter of a mile below the monument. From its form the wits of Bath called it T. Totum. The whole structure was but 120ft. square. Much to the regret of the architect, it suffered from two fires, and was afterwards altered. At the south end of the Kingsdown at Bradford-on-Avon stands Belcombe Brook Villa, built in 1734 for Mr. Francis Yerbury. It was here that Wood showed himself to be a master of landscape gardening. The elevation is finished with a pediment supported by four Ionic pilasters, the lower windows being well treated with triangular pediments and close balconies, and the upper ones having moulded architraves only. It is 37ft. wide and 24ft. deep.

A paper by M. A. GREEN, read before the London Architectural Association, April 19, 1901.

At Bathford, on the entrance of Kingsdown and looking north-west, is to be found one of the most finished of Wood's buildings. Titan-Barrow Loggia was erected some fourteen years after Belcombe Brook Villa, in 1748, for Mr. Southwell Piggott. In its central part it bears some resemblance to the general treatment of the latter, though the Corinthian order is here used and small wings are added, the whole front being 16ft. wide. The drawing-room is of such a height as to include the half-story. This building would have gained much in dignity if it had been raised on a substructure. The mansion of Prior Park was the largest and best work of Wood, and was begun about 1733. Let him speak as to its origin: “The reflection cast upon the freestone of the halls of Bath brought him (Mr. Allen) to a resolution to exhibit it in a seat which he had determined to build for himself near his works, to much greater advantage and in much greater variety of uses than it had ever appeared in any other structure.” The scheme of the design was three-fold—a central mansion with east and west wings and a pavilion placed between these three more important buildings, the mansion occupying about 150ft., and the whole line of building from end to end about 1,200ft. to 1,300ft. in length. The south side of the mansion, facing up the hill towards Combe Down, and at a height of about 460ft. above sea-level, consists of a hexastyle Ionic front with attached columns, and this forms the entrance; the windows on either side are simple in the extreme, bearing a strong contrast to those on the north side and the two ends. Immediately below the cornice there were originally windows along the frieze, which gave light to the garrets; they are now nearly all blocked up. The basement story lies in an area, and there are no balusters in the parapet. The north side looking towards the city is a fine front, and is full of detail. In the first place the natural slope of the ground allowed of the basement being entirely exposed as shown on the elevation, which is the original design of Wood, who had never intended the flight of steps as now seen, although this has added greatly to the dignity of the building. The fine projecting hexastyle portico was intended to be a rival, and something more, to the one which the architect, Colin Campbell, had erected at Wanstead House, in Essex, for where is that one? I had columns of 3ft. in diameter, these were 3ft. 1½in., and on the return side are two complete intervals between the columns instead of one and a small portion of another as at Wanstead. On this front and the two ends there is an open balustrade, and the windows of the ground and first floors are dressed with moulded architraves and heads, those on the ground floor resembling the ones which are seen in the villa at Belcombe Brook. Originally the detail of these was intended to be richer still. A word or two as to the building of this house, as Wood gives it: 800 tons or 16,000cwt. of freestone in large blocks are buried underground to make the foundation walls as strong as the nature of the ground seemed to require. After this, the walls of the basement were built inside and out with freestone, the ceilings of the rooms and passages were arched or vaulted over in stone, and the floor was paved with a harder kind called ragstone. These rooms are 12ft. high in the main, and the passage, which runs through the length of the house, is 1ft. lower in height, and is divided into five parts, being the chief ornament of this portion of the house; while the architraves of the door-cases were moulded upon their external faces. The ground floor was 16ft. high. The hall, which extends from front to back of the building, and has eight Corinthian columns to support the floor above, was originally covered over entirely; but has now been opened in the middle, so that one sees from below the cove and ceiling of the upper story, the former with its rich ornamental plaster work. The pilasters and caps are of stone. The walls of the ground floor are built entirely of freestone both outside and in, and the fixed ornamental parts of the hall and other parts were originally of stone also, though those of the dining and drawing-rooms were afterwards cut off, and these rooms lined with wood. There is great refinement in the door-head of the dining-room, and the mouldings of the door panels are also enriched. It is curious to contrast this with the naturalistic treatment in the pilasters. Of much the same general character is the drawing-room, but an elaborate mass of carving over the fireplace, wonderful as it may be, seems inconsistent with the dignity of the other parts.

buildings, and was simple in its first design: like other parts it was lined with freestone. The east

a good three-light window at the first floor, with in 1743. Two fine sweeps of stone steps with

Bridge, considered to be the work of Wood. The interior of the bridge is well treated. Except the ceiling all is of stone, and the entablature has the swelling frieze which

character, and, it must be admitted, are not like for building a grand parade on the south side

which had been intended to be 100ft. wide, was reduced to about half that amount, Wood turned his attention to the large space at the south-east side of the city, and began to lay out his ground

the old Abbey Orchard. The first stone of the first house of the Grand Parade (now North Parade) was laid on March 10, 1739-1740. It was intended to have adorned the middle block of buildings with Corinthian columns and pilasters; but the ornament was cast aside and the whole executed in a plain manner, as we see

Allen's town house, and little known or appreciated, there lies a large court built by Wood, with

having doorways with the Corinthian order, and often with panelled walls inside, good staircases, and much finish of detail. They are North Parade Buildings. At the west side of Grange-grove stood until quite recently an edifice known as Nassau House.

Richard Boyle, fourth Earl of Cork and Burlington, about 1730. He was a companion of Pope. After his death in 1753, the house became the Bath residence of the Earl of Howth about 1780. The chief point of interest in the interior was the staircase. There seems to have been considerable difficulty in the commencement of the Mineral Water Hospital, called then the General Hospital, designed by Wood. The site at first proposed in 1727 was on the north corner of the city. In 1730 plans were made, but disputes occurring in the conveyance of the land, the trustees in 1737 accepted the offer of a piece of ground in the north part of the city. A new set of plans was made by Wood in 1738, the work of demolishing the old houses was commenced, and the first stone was laid on July 6. The hospital was finished in 1742. The stone and other materials for this building were provided by Ralph Allen. Although Wood prepared the designs for the Grammar School in Broad-street, it is not known that he executed the building. The building was erected between 1750 and 1760. The "History of Bath," published by John Wood the elder in 1749, though in part a chimerical work, is a valuable addition to the records of the state of the city during the first half of the 18th century. Gay-street was designed by the elder Wood, but executed by his son, and it was in the house at the corner of Queen-square and Gay-street that the younger Wood lived. The rooms of the circular bay here are planned as a rectangle with an apse at each end, that facing outwards forming the window, which on the ground floor is treated simply, with rusticated blocks between the architraves; but on the upper floor coupled Ionic columns between and on each side of the lights help to enrich the fine Venetian window. It is the only instance

interior is treated with long panels and an enriched plaster cornice. There are Corinthian and Ionic pilasters with a pediment over mark the door in the centre of the same; all these are executed in wood and painted. The panel on this

designed by the elder Wood, was carried out by his son. It was in 1753, the year before his death, that John Wood the elder entered into an indenture with the Right Hon. William Pitt for the building of a house here; this was No. 7. The buildings were begun in 1754, and they took fifteen years in completion. It was at No. 24 that Thomas Gainsborough painted some of his most famous portraits. The aesthetic sympathy of the younger Wood with his father is a remarkable feature in his buildings, and in the Crescent, the work of the son, exactly the same use of the order is seen as in Queen-square, though less elaborately worked out, and in the Assembly Rooms the broad treatment of spaces externally and internally is observable as in the work of the elder Wood. The Crescent was begun in 1767, but not finished till about eight years after. The diameter of the circus from house to house is about 320ft., and the major axis of the crescent (an ellipse on plan) 550ft. In the interior treatment of the crescent the hall has usually an arch with enriched panels in the soffit. The staircase walls are panelled out with plaster mouldings, and are sometimes enriched with festoons and paterae. The walls of the principle rooms are also panelled, and the door-heads enriched with carving. But the ceilings are the chief means of decoration. The enrichment is nearly always in low relief, though occasionally small subjects, such as birds, are introduced in the centre in very high relief. The panelling is at times set out geometrically, concentric circles occupying the width of the room, with long panels at the two ends, and an inclosing band of ornament running round the four sides, or perhaps divided into still smaller panels with a variety of forms. The cornice is usually very rich. A drawing of Bath taken about 1757 shows the Circus complete, but no indication of Brock-street or the Crescent. Brock-street was the work of the younger Wood, and connects the Circus and the Crescent. The first stone of the New Assembly Rooms in Alfred-street, on the east of the Circus, was laid by Wood in May, 1769, five years after the proposal to build a somewhat similar set of rooms at the north-west corner of Queen-square. The rooms were finished in 1771 at a cost of £20,000, on ground covering over an acre and a half. The planning is exceptionally good. From the hall in the centre of the building the entrance on the left leads to the large assembly or ballroom, that in the middle into the octagon, a room 48ft. in diameter, and that on the right into the smaller assembly or tea-room. The entablature over the entrances is supported on Doric columns. The looking-glasses, with their ornaments, are of the same date as the building. Beyond the octagon lies the cardroom, 60ft. long and 30ft. wide. The ballroom, 105ft. long, 42ft. wide, and the same in height, is divided in its altitude into three parts. The most interesting portion of the tea-room is that at the back, where six Ionic columns stand forward some little distance and support a gallery on the first floor, which has an equal number of detached Corinthian columns, while an engaged colonnade of the same order runs all round the room. Alfred-street was also built by Wood. The doorway of the last house but one on the side opposite to the Assembly Rooms is one of the richest in Bath—that is to say, the richest, good taste being the standard. About 1776 Wood rebuilt the Leper's Bath, adjoining the Hotting pump-room, and about the same time he built Woolley Church, near Bath, the cupola of which is worthy of note. In 1779 he built Hardenhuish Church, near Chippenham, a cleverly-designed piece of work. The exterior shows a good steeple. On the side is a three-light Venetian window, and the internal treatment is such that the great thickness of the wall is fully set off by the interior Doric columns being set close to the inside of the wall with a broad arch thrown across corresponding with that on the outside. John Wood, jun., died in 1781 at the house at Bathaston which his father had built. The Exchange in Bristol was by Wood senior, erected 1740-43; also Redland Court, in the same city, the latter with terraces in the Italian manner; and Stockerwich House, near Box, was built by him in 1750. Milson-street was probably designed by Robert Lightholder about 1760. He at any rate designed the Octagon Chapel there, which was opened in 1767. About this period the corporation had to rebuild the old

the old Bath, on the Father, or Bathwick, side of the river, was instructed to proceed with the matter. This house afterwards became the gaol, and, considering that Attwood's trade was that of a plumber and painter, it shows no little talent. He died, however, from the effects of an accident while the old houses near the town-hall were being cleared away, and shortly afterwards—in 1774—a plan for a town-hall and markets was offered by Thomas Baldwin, who was then only twenty-four years of age, having been born in 1750. These were approved by the corporation, and carried out. Thus Baldwin became the chief follower of the Woods. In 1780 he was made city surveyor, and four years later city architect. Baldwin's work has not the strength of that of the Woods, but depends more on surface decoration. However, the recessing of the windows here within a great inclosing arch is a good feature, and the rustication, known as "vermiculated," with which the central portion of the lower story is treated, adds immensely to the strength of the whole design. At this period, nevertheless, the ornamental treatment of interior surfaces was not less beautiful than any that had been before, and the Guildhall contains within its walls perhaps the finest of any. The soffits of the staircase, as well as the walls and ceiling, were liberally adorned, and the manner of the whole is chaste in the extreme. The banquetting-room is, without any exception, the finest thing of its kind in Bath; the building was completed in 1777. Passing down Bridge-street, we come to the Pulteney Bridge, which was built about 1776 from designs by Robert Adam for his patron, William Pulteney, Earl of Bath. Beyond this the domestic work of Baldwin is principally seen. Great Pulteney-street, which was begun about 1792, was his finest work. It has a very imposing effect, from its great length and width. The two colonnades of the Old Pump Room were certainly the work of Baldwin, and it would appear that the whole of this front was at least designed and commenced by the same hand, who ever might have carried out the upper part. In about 1790 Reveley, the architect, had built Camden-crescent, remarkable for the manner in which the rise of the ground is overcome in the design. In 1789 Union-street was formed, and afterwards Cheap-street and Westgate-street were widened, and Bath-street was built, all under Baldwin. The Ionic colonnade in the latter street forms an interesting feature with the Cross Bath at the bottom, also erected from Baldwin's designs. This building has some good detail upon it, the Corinthian capitals particularly being very finely worked. At the north end is a portico supported on four columns. The author concluded by exhibiting and describing Mr. Sturge Catterell's "Historic Map of Bath," which shows the remarkable changes in and growth of the city during the 18th century.

RESULTS OF SOME TESTS WITH FIRE-RESISTING MATERIALS.*

THE work of the British Fire Prevention Committee, so far as it has been undertaken, may be divided under four heads:—Firstly: Experimental tests with floors, commencing with simple forms of construction deemed to be fire-resisting only, and proceeding to more complex forms deemed to be fire-proof. Secondly: Experimental tests with fire-resisting partitions of various constructions. Thirdly: Experimental tests with doors of various constructions, both of wood and iron, or a combination of both. Fourthly: Experimental tests with projective coverings to openings and methods of glazing which in themselves form a protection from fire. This last is a very important factor in dealing with fire-prevention; as, however fire-resisting a building may be in itself, unless it can resist fire from the outside, it is as liable to destruction as the most inflammable building. Starting with experimental tests with floors, the first to which I shall direct your notice is an ordinary floor with deal joints and floor, the soffit of which was protected by plaster termed asbestic plaster. This was applied on ordinary wood lathing, and the thickness of the plaster after completion was about 1½ in. On drying this reduced itself to about ½ in., and during the process of drying cracks developed over the surface. Before the test these were stopped, and the appearance of

A paper by Mr. F. C. M. S. and Mr. S. A. V. read before the Society of Architects on April 26, 1901.

the soffit as you now see it is due to this cause. The testee decided to have a 45 minutes' test, 15 minutes at a temperature not exceeding 500°, then a gradually increasing temperature for the remaining 30 minutes up to 1,500°. The summary of effect is as follows:—No perceptible difference in the ceiling was observed during the progress of the test. The application of water caused no injury to the ceiling. No portion of the ceiling fell either during or after the test. When examined after the test cracks had developed over the surface, and some of the wood laths were charred, but none had ignited. The test may be considered satisfactory as the object was attained—*viz.*, to render the floor fire-resisting for 45 minutes which would, under ordinary circumstances, have allowed the occupants in the rooms over to have escaped. The next test is of a similar nature. The floor was of ordinary joists and boarding, but the protecting material to the soffit was slag-wool 1½ in. thick. This was secured with screws to the soffit of the joists and a ½ in. match-boarded ceiling was placed under the slag wool. The testee decided to have a test of one hour's duration with a gradually increasing temperature to 1,800°. The summary of effect was as follows:—At the conclusion of the test, the flooring on top was, so far as could be seen, uninjured, and when the joists were examined they were sound. The boarded ceiling had, of course, disappeared, but the slag-wool remained in position and had protected the floor. A good deal of heat was retained in the floor, and at one point, where water had not been applied, a small hole was burnt in the flooring some three hours after the test was concluded. This test may also be considered satisfactory, as it retarded the spread of the fire for at least an hour. We now come to a test of an interesting nature as showing the fire-resisting qualities of simple balks of timber laid side by side, any spaces between being filled with fire-clay grout, the soffit not being protected in any way; the thickness of the balks was 9 in. This was the committee's own test, and it was decided to have an 80 minutes' test with a gradual temperature up to 2,000° Fahr. The result was that the under surface of the wood beams was charred to an average depth of about 2 in., but beyond this no damage was done. The view shows the soffit of the floor after the test, and the following line the end of one of the balks after removal. The test clearly demonstrates what fire-resistance there is in such a floor; but it must be carefully borne in mind that no space must be left between the timbers that is unfilled by the grouting; otherwise the fire draws up through and spreads to the next floor. Section 74 of the London Building Act provides that, in premises exceeding 1,000sq.ft. in area and used partly for purposes of trade and partly as a dwelling-house, the part used for purposes of trade shall be separated from the part used as a dwelling-house by floors and walls of fire-resisting materials. This does not, of course, imply that the floor is to be fire-proof, but the floor is to be sufficiently fire-resisting to prevent the spread of fire at least for a reasonable time, to give an opportunity for the inmates above to escape. And in the schedule of materials deemed to be fire-resisting, concrete filled in between joists of floor is so deemed. The committee thought that a test in this direction would be of considerable interest, and yield some useful information. Accordingly, they made preparations for the simplest interpretation of the section, and arranged for a careful test. With 7 by 2 joists, ½ in. flooring, coke-breeze and Portland cement concrete, 5 to 1, filled in between the joists to a depth of 5 in., and kept in position by 1 by ½ in. fillets nailed to the sides of joists ½ in. from the bottom, a ceiling was nailed on to the soffit formed of ½ in. match-boarding. The time decided for the test was 75 minutes, commencing with a temperature of 500°, and increasing to not more than 2,300°. The floor also was to be loaded with 100lb. per square foot distributed. The result of the test far exceeded the committee's expectations, and it was not till after 12 minutes the floor collapsed. The summary of effect is as follows:—In 15 minutes all the boarding to the soffit was consumed; in 54 minutes flame came through the floor between the last joist and the wall. I should like to point out here what an important part the 1 by ½ fillets played in the construction of the floor in preventing the fire getting through, and it was in consequence of the fillets being omitted on the outer side of the two end joists that the flame came through there, and these two joists were the

most damaged. The concrete between the two last joists fell out in 74 minutes, meanwhile the fire had been gradually eating its way up the other joists some 2 in. to 2½ in.; they being thus reduced from 7 in. to 5 in. or 4½ in. could no longer sustain the weight of 100lb. per square foot, and the floor and load collapsed in 82 minutes. This was a very severe test for so light a floor, and I think you will admit that it stood it bravely. The view shows the remains. The floor-boards are not burnt, but only blackened by the smoke. A test of a somewhat similar character to the one just mentioned was instituted to discover the fire-resisting qualities of different descriptions of concrete. The floor now before us was constructed of 3 by 9 deal joists spaced 16½ in. centre to centre, which gave seven bays. Two of these bays were filled in to the full depth of the joists with coke-breeze and cement concrete, 6 to 1. The next two bays were filled in with pit ballast and cement concrete, 6 to 1, and the remaining three bays were filled in with concrete composed of pit ballast three parts, coke-breeze three parts, and cement one part. The concrete was supported between the joists by 1½ in. by ½ in. fillets. The soffit of the ceiling was plastered render float and set, and ½ in. flooring was nailed on top of the joists to complete the floor. It was decided to test this floor for one hour and a half to a gradually increased temperature up to 2,500° Fahr., and then to apply a stream of water for four minutes. The summary of the test was that after a few minutes the plaster of the ceiling began to fall, whereupon the lower edges of the joists became ignited and gradually burned upwards. At the end of the period the whole of the floor was seen to be fully incandescent, particularly that in the coke-breeze and cement bays. On the application of water the soffit of the ballast and cement concrete and the ballast, breeze, and cement concrete immediately disintegrated, and about 3 in. in depth of it fell. The coke-breeze and cement alone was not affected. The floor remained in position at the conclusion of the test, but appeared seriously weakened and deflected. It is to be regretted that it did not remain in position sufficiently long to be photographed; but after a test of this description, a good deal of latent heat remains in the materials, and the joists being of combustible material continued to smoulder, and the result was the collapse of the floor five hours after the test. On examining the remains, the joists were found to be burnt through 2 in. to 6 in. deep, and tapering to a further depth at the ends. The boarding was found to be slightly charred on the underside and at the joists, but otherwise was sound. It could not be said the fire had passed through the floor, although smoke came through, and I think the floor may be considered a fire-stop, although the weight of the concrete caused the collapse of the floor, and might constitute a source of danger on that account. The behaviour of the ballast concrete shows it an undesirable material for fire-resistance, while coke-breeze has many advantages. I might add here that from my observation of the tests conducted by the committee it is the more porous and light of the incombustible materials that are the most fire-resisting. The experience gained by the last two tests paved the way to the next; both the previous tests had shown that if the soffit of the joists had had further protection the fire-resistance of the floor would have been greater; consequently a test was arranged as shown, with an expanded metal ceiling suspended 2 in. below the bottom of the 7 by 2 wooden joists, which formed a centring for the concrete as well as a key for the plaster. The construction needs no description beyond that the concrete below the joists was of dry ashes and Portland cement, and that between the joists was composed of coke-breeze three parts, dry ashes two parts, and Portland cement one part. The test was arranged for two hours, which is the longest time yet given for a floor formed partly of combustible material. The temperature was not to exceed 2,300° Fahr., and to be followed by a stream of water for two minutes. The floor also was to be loaded with 100lb. per foot distributed. The summary of effect is very short:—In 28 minutes plaster began to fall in patches from the ceiling, and continued to fall at intervals till the end of the test, when water was applied and further plaster was washed away. No other effect of the fire was noticeable, and at the conclusion of the test the floor was intact and carried its load. This floor did not subsequently collapse, although it smouldered all night, and I am enabled to show

you its condition the next day from the underside and from the top. It was found that all the joists had been more or less damaged by the fire smouldering all night; portions of them were quite consumed, leaving the matrix only in the concrete. The least damaged of the nine joists forming the floor was the centre one, which was intact but for a piece about 12 in. long and 5 in. deep, which was consumed about 15 in. distant from the south end. This irregular consumption of the joists I am inclined to think was due to the difficulty of so filling in the concrete on the soffit of the joists as to form a complete protection. The vertical strips of expanded metal which carried the horizontal portion conducted the heat up the joists, and appeared a source of weakness so far as the fire-resistance was concerned. The next test, which was submitted by a manufacturer, deals with a floor supported by 9 by 3 wooden joists with a terracotta wire lath suspended ceiling, and an air space between the ceiling and the concrete filling between the joists. The lathing was spread over the top of the joists, and depressed in the centre to the shape of an inverted arch; upon this the concrete was placed to a depth of 7 in. in the centre, which, when levelled, brought it 2 in. thick over the top of the joists. The concrete was of Portland cement and washed sand, in the proportion of one yard of sand to two bags of cement. The suspended ceiling was formed of terracotta wired lathing secured to iron rods fixed to the soffit of joists with iron hooks. Ordinary three-coat work was applied to the lathing, but a proportion of plaster of Paris was incorporated with the material. The thickness of the plastering was 1½ in. The test was arranged for one hour and a quarter, the temperature was not to exceed 2,000° Fahr., and the floor was to be loaded with 56lb. per foot, distributed. The summary of the effect was that a considerable portion of the plaster ceiling fell during the test, some of the lathing being bare before the test closed. The floor cracked at each side to the extent of ½ in., and dropped ½ in. When water was applied, smoke, steam, and sparks came through the cracks in the top of the floor. One of the joists carrying the ceiling was entirely destroyed, two partially so, and one, though discoloured, was practically sound. This floor did not collapse, but its supports were practically destroyed; it trusted for its fire-resistance to the suspended ceiling on the terracotta wired lathing and air space; but after the ceiling was pierced, the heat had full play around three sides of the deal joists, and so brought about its ruin. A floor of similar construction, but with iron supports, will be mentioned later. We now come to floors having pretensions to be fireproof—*i.e.*, the constructional parts of the floor are of non-combustible material, and the committee started with a simple iron-and-concrete floor, the soffits of the iron joists forming the floor being exposed. The committee were somewhat criticised for instituting this test as being a useless one, the result of which was already known. But I think the committee were perfectly right in having it. Firstly, because it is a very common form of fire-proof floor, and, secondly, it gave the committee data from which to start in showing by comparison the advantage to be derived by protecting or increasing the ironwork. The floor, as you will see, is constructed of 5 by 4½ steel joists placed 2ft. 6 in. apart, and filled in with coke-breeze and Portland cement concrete 5 to 1. It was loaded with 168lb. per foot distributed. It was proposed to test this floor for 2½ hours up to a temperature of 2,300° Fahr., but after 1 hour and 25 minutes, and at a temperature of 1,650° the bulk of the concrete in the two outer bays collapsed, owing to the deflection of the steel joists. The floor began to deflect after 20 minutes at a temperature of 1,200°, and a maximum deflection of 10½ in. was recorded in one of the joists. The coke-breeze concrete was but little deteriorated. The disadvantage of filling in concrete between joists is in setting up and striking the centring, and the attendant obstruction to the progress of the works by the supports. The committee instituted the following test, in which corrugated iron filled in between the iron joists was the centring employed, and the coke breeze and cement concrete, 4 to 1, filled in on top. The soffit of the joists and corrugated-iron centring was protected by 2 by 3 deal ceiling joists suspended from the joists, and wire netting, ½ in. mesh, was used as lathing, and a plaster ceiling, three-coat work, applied; inch floor boards were nailed into the breeze concrete on top, the floor

Mr. George Wragge, of Messrs. Eastwoods, Ltd., chairman of the Kent Brick Makers' Association, protested, as one of the largest manufacturers of stock bricks, against Mr. Hill's contemptuous reference to "slop bricks." Sand-made bricks—such as his firm made—were not "slop moulded." As to the sizes of bricks, he had seen samples from 1½ in. to 4 in. in thickness, and varying in length up to 15 in. The manufacturers were quite prepared to make any sized brick that was required if the builders were willing to pay for it; but too many engineers specified the very best materials and work, and offered the very lowest price. Some went so far as to specify a "sound well-burnt brick," adding that it must also be of "a golden tint in colour." They would not get both, for the golden-tinted brick was not well burnt. It might be laid down as an axiom that the further south one went the smaller was the brick used. The very smallest he had seen in Europe were in Italy, where they ran to 2½ in. in thickness, whereas in Scotland

the thickness was 3 in. In any common agreement as to size it could be made clear whether it applied all round to shippers as well as to golden-tongued bricks. The most convenient standard length would be from 8 in. to 9 in.

Mr. Bernard J. Dickson, A.R.I.B.A., a member of the committee, said they recommended a length of 9 in., as they were not likely to get any more bricks laid in a day if the size were reduced than if they specified larger bricks, though, as a matter of fact, a uniform length of 9 in. centre to centre of joint would give architects far less trouble in calculating dimensions of buildings. Surely the varying amount of contraction was not an insuperable obstacle to securing a standard size, for by a few experiments a brickmaker could soon ascertain the amount of contraction that would result in burning from a given proportion of mixture in the kiln, and proportion his moulds accordingly.

Mr. S. E. Collier, of Reading, thought it would be very desirable that brickmakers should come to an agreement among themselves as to the standards of sizes to be adopted for bricks throughout the country, and, speaking as a maker of ornamental bricks, he felt it was most important that all bricks should be of one size. The width of a brick ought to be rather less than half the length to allow of good bond.

Mr. Goodenough, of Sittingbourne, believed that standardisation of bricks was practically an impossibility on account of the varieties of earths employed in brickmaking—the proportion of strong and mild earths employed and the proportion of water mixed with the stuff all affected the sizes of the burnt products. In fact, in dealing with so cheap and widespread a commodity as brick-earth, they could not come to so close a calculation as to absolutely fix a standard of dimensions, and there was a vast difference in the amount of heat applied. If engineers and architects were going to specify an absolute standard of size, they must be prepared to pay a price which would allow for throwing out all bricks which were too large or too small.

The Chairman thought there would be hardly any difference on the abstract question that it was desirable to establish a standard size for bricks, and he believed that once this was agreed upon, every manufacturer would do his best to come into line with the general requirement in the majority of products from clamps and kilns. He would formally propose that such a standard was desirable, and that the representatives of the several brickmaking associations, whom he was glad to see present that afternoon, be asked to convene meetings of the bodies they represented to send delegates to act on the joint committee.

Mr. H. W. Richards seconded the motion.

Mr. Bates, teacher of bricklaying at the Northampton and Chelsea Institutes, said, as a practical bricklayer, the main thing to settle was the relative proportions of length to breadth. It was not the fact that the largest bricks were the most quickly laid. He had had much experience in bricklaying in America and in many parts of England, and he would say, Do not make the bricks larger, but rather smaller than the suggested standard. The stretcher should be twice the length of the width of header, plus one mortar joint to make a sound bond. He did not think the joint committee had sufficiently considered how these suggested dimensions would work out in practice, in the matter of proportioning length to breadth. Rough bricks needed twice as wide joints as smooth-faced ones.

Mr. J. C. Hill added that a weight-carrying brick for inside use ought to be smaller than bricks used for facing purposes, to which a fine joint was given. There should be a standard size for facers, and a slightly smaller size for insides.

Mr. A. Saxon Snell, F.R.I.B.A., thought Mr. Hill's suggestion just made a retrograde one. Of course, if work was carried out in cement, the varying sizes of insides and facers would matter little; but if work was carried out in mortar, there would inevitably be settlements and cracks if the inside bricks were smaller than the facings. He would specify all joints to be of the same thickness.

Mr. Charles Grucher urged that a fair allowance for shrinkage should be made, as variation in sizes was unavoidable with stocks and similarly made bricks.

A builder present said the variations in sizes were over-estimated by brickmakers. It should be remembered that millions of bricks were made and sold which went into buildings for which no architect's specifications were drawn up. The

pressure that could be brought to bear on the brick manufacturers by the architects and engineers was as nothing to that which could be exerted by builders and contractors.

Mr. Blizard inquired whether the joint committee proposed to adopt one standard of size for the whole kingdom, or a number of variations, to suit trade in different localities? The differences in individual kilns and clamps due to shrinkage were slight compared to those due to variations between the sizes adopted in the North and South of England.

Mr. Searles-Wood replied that it was proposed to adopt a uniform standard for all work.

Another brickmaker asked, In that case who was to come up and who was to go down? Were the Northern makers prepared to reduce the dimensions of their bricks, or were the Southern men to enlarge their sizes?

Mr. J. E. Hill: The whole question hangs on the answer to this question.

The Chairman said the question was obviously one to be settled by the joint committee, and he trusted the brick manufacturers of all districts would be fairly represented on that body.

Mr. Smart, of Nottingham, supported the resolution, remarking that a wire-cut brick could be made to any desired size. He and other makers in the North Midlands were now making a smaller brick than in former years, and, if it were desired, there would be no difficulty in reducing their sizes to those adopted in the South.

The Chairman then put the resolution, which was unanimously adopted, and the meeting terminated.

THE OWNERSHIP OF THE HIGHWAY.

A PAPER bearing the above title was read at the meeting of the Surveyors' Institution held on Monday evening last by Mr. Clavell Salter, barrister-at-law, who said that the large area of land occupied by the highways had long been the subject of special legislation. The rights of the public over it were jealously guarded, while the rights of the owner of the soil had been from time to time restricted. The author proposed to deal only with the public highway as distinct from those private roads which were used either by reason of occupation or by permission of the owner. The expression "private street" was common in many modern Acts of Parliament; but such a street was private only in the sense that its maintenance and repair were in private hands. It was in effect a highway over which the public had a right to pass. The simplest and most ancient form of highway was the footpath—the right of public passage on foot only; the next the driftway or bridlepath; and lastly the full highway, with complete right of public passage in any manner. With few exceptions, all highways had their origin in dedication by the owner of the soil of a right of passage over his land. In the case of highways which have existed from time immemorial, the law assumed such a dedication. Dedication, although a gift to the people, was a gift with limitations. A highway need not be fenced by the owner of the soil; it might under certain circumstances be periodically ploughed up; but if once it were dedicated, the owner could not derogate from his grant. In the absence of express enactment, the property in the soil of a highway rested with the former owner. In the case of highways of remote antiquity, it was presumed that the property in the soil vested in the owners of the adjoining land, the dividing line being the middle of the road. When in a conveyance of property it is described as being bounded by a highway, the presumption is that the conveyance passes the property *ad medium filum viae*, although the measurements and plans do not distinctly show this. A striking instance of this was afforded by a case in which a waggon standing on the highway adjoining a certain farm was seized by the landlord for arrears of rent as a chattel on the demised land, which was presumed to extend to the middle of the highway. Where a highway runs between inclosed lands the law assumed that the whole width from hedge to hedge was dedicated, although only a strip in the middle might be metalled. The origin of most wastes was probably the leaving by the owner of a strip between the highway and his fence, over which the right of deviation when the road was foundrous might be exercised. As to the rights of the owner of the soil, the author laid it down that the owner could use and enjoy his property in any way no

inconsistent with the public right of passage. The trees and herbage on the highway belonged to him, and he could let the right of pasturage. He could resist encroachment, could remove anything not necessary to the public right of passage, could excavate under the road, make tunnels, take minerals, and object to the erection of posts on, or the carrying of wires over, the road or the wastes. He might plough across a footpath that was usually ploughed; and it had been decided that the repairing of a footpath of the kind with materials which made ploughing impossible was a trespass. The cases of "Reg. v. Pratt" and "Harrison v. Rutland" both decided that the highway could only be used for the legitimate purpose of passing over it, and "Hickman v. Maisey" went even further, and decided that the public road could not be taken advantage of to overlook premises to the detriment of their usefulness for a special purpose. Special Acts gave telegraph and gas and water companies the right to excavate and lay pipes or erect posts, &c., but no one, whether individual or public authority, had any right, without statutory permission, to do anything on a highway beyond merely passing over it. In the Metropolis there were special conditions. For instance, where a collision under highways, the surface belonged to the local authority, but the adjoining owner possessed and must maintain the subjacent structure. If spaces, such as are frequently seen in London streets, in front of business premises, often a little higher than the rest of the footway, or having gratings lighting basement windows, had not been dedicated, they remained the property of the occupier, and were repairable by him, the presumption being that in many cases they occupied the site of what were originally areas.

A highway authority could, by virtue of its statutory powers, set up such poles, &c., as were necessary for electrically lighting the road, and could give permission to a gas company to lay mains; but it had no power to allow a private company to put down pipes for its private use (see "Salt Union v. Harvey"). Mr. Salter gave a number of cases in which the question of the ownership of the soil of a highway had been raised, and came to the conclusion that the sole property vested in the adjoining owner or owners, subject to the statutory powers of right of passage or of excavation conferred by Act on public bodies, and to the ordinary right of passage over the surface which by common law the public possessed. A discussion followed, in which Messrs. Howard Martin, C. Bidwell, A. Vernon, H. Chatfield Clarke, A. M. Brown, G. Martin, J. H. Sabin, and the president took part.

OBITUARY.

The death is announced of Mr. JOHN JAMES THOMSON, architect, of St. James's Square, S.W., who was elected Associate of the Royal Institute of British Architects in 1864, Fellow in 1898, and was recently transferred to the class of Retired Fellows. Mr. Thomson held for many years the office of superintending surveyor to the Board of Agriculture.

CHIPS.

The search for a site for the Birmingham crematorium has at length been rewarded with success, and the directors, after many rebuffs, have purchased a plot of land on the Birmingham and Walsall road, opposite a corner of Perry Hall Park, General Calthorpe's residence, and twenty minutes' drive from Witton Cemetery. Mr. F. B. Osborn, F.R.I.B.A., Birmingham, will be the architect of the buildings, and Mr. J. E. Wilcox, M.I.C.E., engineer for the construction of the furnace.

The Housing of the Working Classes was the subject of a conference of Metropolitan Borough Councils held on Monday at Islington. A resolution was passed advocating an understanding with the London County Council so as to avoid dual control in dealing with the question.

An important picture sale took place at Christie's on Saturday, when 114 lots from various sources realised £46,291. A landscape by Hobbema brought 9,400 guineas; a portrait of Mrs. Crespiigny, by Romney, 5,600 guineas; a portrait of Mrs. Hallam, by Gainsborough, 1,780 guineas; a portrait of Mrs. Willett, by Sir Joshua Reynolds, 1,620 guineas; a portrait by Murillo of himself, 2,720 guineas; a portrait of Admiral De Hoche-Pied, by B. Van der Helst, 1,900 guineas; a portrait of Jacqueline de Bourgoigne, by J. de Mabuse, 2,400 guineas; and a portrait of J. Musters, by Sir Joshua Reynolds, 1,600 guineas.

A G E N T N O T E I N P R I N T A N D I N S E R I E S
 P U B L I S H E R W I L E Y A N D S O N S L T D

order the appellants to pay to the respondents the sum of \$100,000, the cost of the study.

apportioned to them of paving an alleged new street called Totterdown (on the north side thereof). Finding that the same was not a new street, the High-street, the way was not paved in that direction. Finding that the petitioners had formed road, 16ft. wide, used for wheel and foot traffic, and led into meadows open only to foot passengers, the petitioners were ordered to pay the costs of the proceedings.

been built some 75 years. In 1898 the roadway was widened to 40ft., and a new street, known as St. Cyprian-street, was made, running into Totterdown from the north, and the lands on the north side of Totterdown were laid out for building. The premises now on the north side of Totterdown included the flanking wall of the premises owned by the appellants, known as 29, St. Cyprian-street, a third of which was used as a passage leading to the entrance to the rear of houses in High-street. In April, 1899, the board resolved to pave Totterdown from High-street to a point 310ft. east and to charge the expenses of the work to the ratepayers liable thereon. The apportionment was resisted by the owner of the houses on the south side, and the summons issued against him was returned on the 22nd

that the southern side of Totterdown was an old street, and that it could not therefore be treated as a new street. The board then passed a fresh resolution ordering that "a certain new street, situate and being Totterdown, on the north side thereof" be paved so as to make it continue to be a uniform part of the existing carriageway, and that the estimated expenses of such paving be apportioned and charged on the owners of the houses forming and the land bounding or abutting on such new street. Under this resolution the expenses were apportioned among the owners of property on the north side of Totterdown only. It was contended on behalf of the appellants that the portion of Totterdown proposed to be paved was a new street, and that the

section 105 of the Metropolis Management Act, and sections 77 and 112 of the Metropolis Management Act Amendment Act, 1862, and that the resolution of the board was invalid, and, further, that the apportionment was bad, inasmuch as the owners on the south side of the roadway were not made contributories. The magistrate held that the portion of the roadway ordered to be paved was a new street, and that the resolution and apportionment were valid. Mr. Richards, for the appellants, contended that, having regard to the fact that 16ft. of roadway was an old street, the whole must be treated as an old street, citing "*Richards v. Kessick*," "*White v. Vestry of Fulham*," and "*Clerkenwell Vestry v. Edmundson*" (1901). He also contended that, as regards the new portion of the roadway, the frontagers on both sides should have been charged. He cited "*Vestry of Mile End v. Guardians of Whitechapel*," "*Vestry of Paddington v. North Metropolitan Railway Co.*" (1894), "*Clacton Local Board v. Young*" (1895). Mr. Mattinson, K.C. (with whom was Mr. J. C. Earle), for the respondents, contended that the strip of land 24ft. wide added to the roadway in 1898 was a new street, and that the owners of property on the north side only were, therefore, liable to contribute to the expense of paving it. The Court dismissed the appeal. The Lord Chief Justice said that there was a good deal to be said for the view that, where a road was so altered that practically a new street was made out of what was an old highway, it might not be unreasonable to treat it as a new street as to the whole; but the decisions were too strong for that view to be taken. It was not disputed that where premises fronted on a new street, then, though the paving was only as to part of the street, the frontagers on both sides of the street were chargeable. That was decided in "*Vestry of Mile End v. Guardians of Whitechapel*." But Mr. Mattinson contended that where there was a highway and a new part is added to it by the frontagers of one side, then that part was the new street and not the whole roadway. His lordship was of opinion that he was right, having regard to the authorities. He thought that the learned magistrate was right in following the authorities, and that the added piece was a new street. Mr. Justice Lawrance concurred.

LIABILITY OR DELAYS BY SUB-CONTRACTORS.—**LESLIE AND CO. (LTD.) V. THE MANAGER OF THE METROPOLITAN ASYLUM DISTRICT.**—In the Court of Appeal, on Monday, the Master of the Rolls and Lords Justices Collins and Romer gave judgment in an appeal of Messrs. Leslie and Co., Ltd., from the judgment of the Divisional Court (Mr. Justice Bigham and Mr. Justice Phillimore) reversing an order made by Mr. Pollock, one of the Official Referees, reported in the BUILDING NEWS of April 10.

Description		11	9in.	9in.	12in.
1	Barbed-wire post, 10 ft. long, 1 1/2 in. dia. at top	per ft. run	s. d.	s. d.	s. d.
2	Wires, extra, 1/4 in. dia. galvanized	each	0 6	1 2	2 0
3	do. 1/8 in. " "	"	0 5	0 9	1 3
4	do. 1/8 in. " "	"	0 6	1 1	2 1
5	do. 1/8 in. " "	"	0 6	1 1	2 1
6	do. 1/8 in. " "	"	0 6	1 1	2 1
7	do. 1/8 in. " "	"	0 6	1 1	2 1
8	do. 1/8 in. " "	"	0 6	1 1	2 1
9	do. 1/8 in. " "	"	0 6	1 1	2 1
10	do. 1/8 in. " "	"	0 6	1 1	2 1
11	do. 1/8 in. " "	"	0 6	1 1	2 1
12	do. 1/8 in. " "	"	0 6	1 1	2 1
13	do. 1/8 in. " "	"	0 6	1 1	2 1
14	do. 1/8 in. " "	"	0 6	1 1	2 1
15	do. 1/8 in. " "	"	0 6	1 1	2 1
16	do. 1/8 in. " "	"	0 6	1 1	2 1
17	do. 1/8 in. " "	"	0 6	1 1	2 1
18	do. 1/8 in. " "	"	0 6	1 1	2 1
19	do. 1/8 in. " "	"	0 6	1 1	2 1
20	do. 1/8 in. " "	"	0 6	1 1	2 1
21	do. 1/8 in. " "	"	0 6	1 1	2 1
22	do. 1/8 in. " "	"	0 6	1 1	2 1
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225	do. 1/8 in. " "	"	0 6	1 1	2 1
226	do. 1/8 in. " "	"	0 6	1 1	2

1000 ft. drain-pipes made and set down, per 1000 ft. with 200 lbs. cutting and cement	0 0 0
Gravel, sink, 100 ft. to 10 ft. Sanitary trap, 4 ft. round, set and set down with out-fall, and set in concrete	0 8 0
Working ground not exceeding 10 ft. deep and backing up drain for 100 ft. and branch of new to old ground and connecting new drain, and making drain 100 ft. fill and man ground, and make good surface	0 7 0
St. George's, H. and G. pipe, 40 ft. run for connecting the drain with sewer, setting clay-trap and two lengths of pipe, the boulder ches and fills in	0 15 0
Drain-pipes and connections taken up, cleaned, and stacked	per ft. run 0 0 1
Clay, Portland, including use of bags, per yd. bushel	0 1 10
Ditto, per bag weighing 2cwt., and containing 2 bushels	0 4 0
Ditto, ditto, 2 bushels, containing 2 cwtals.	0 3 8
Ditto, delivered in London per ton of 10 bags, each	1 15 0
Clay, clean yellow, for puddle walls, &c., per yd. cube	0 5 6
Flint, dry vegetable, and cutting 50 spot rounded	0 1 0
Gravel, clean, best local, unsieved	0 4 3
Lime, including use of bags, unsieved, ground fine, stone, grey Dorking, per bushel	0 0 8
" " " " per yd. cube	0 11 0
" " " " per bushel	0 10 0
" " " " per yd. cube	1 12 6
" " " " per yd. cube	1 5 0

MATERIALS

Supplied copy.

GLAZED STONEWARE DRAIN-PIPPERS, ETC.

Prices are for best quality London make after deducting trade discount, which is 45 per cent. for 4in. and 6in. pipes, 40 per cent. for 9in. pipes, and 35 per cent. for 12in. pipes. "Selected" pipes can be obtained at an increase of 10 per cent., and "selected and tested" at an increase of 25 per cent. above the rates given below. Midland district prices 5 to 10 per cent. less.

Description.	4in.	6in.	9in.	12in.
1/2 in. skeleton pipe, 10 ft. lengths	s. d.	s. d.	s. d.	s. d.
1/2 in. plain do	0 0	0 5	0 8 1/2	1 1 1/2
Taper pieces, plain socket	0 11	1 3	2 1	3 7
do double do	1 1	1 8	2 10	4 9
Traps, 1/2 in. single	1 1	1 8	2 10	4 9
do double	1 8	2 6	4 2 3/4	7 2
Traps, square with 1/2 in. round eye	1 11	3 4	6 0	9 9
do with 1/2 in. round eye	2 5	3 10	6 7	10 5
"Roundish," "Bacon's," or similar trap	5 0	6 4		-
Traps, square or round, for yards, &c.	2 0	3 0	5 0	9 0
Iron zinc-lined for gully-traps	0 8	1 0	2 0	4 0
Iron-mouth traps, with ground surface and 1 flap	2 3	2 9	4 6	7 10
Set-screwed cast-iron straight channel-traps 1 1/2 in. manholes	0 0	0 7	1 0	1 6
Bands for ditto, flat sweep	1 3	1 9	3 0	4 6

	1911.	1912.	1913.	1914.
Agricultural or unglazed earthenware drain-pipes, in 12-in. lengths, per thousand	35.0	60.0	110.0	210.0

Kitchen sink, 2ft. 6in. by 1ft. 8in. by 4in. deep, of vitrified salt-glazed stone ware, with eath- ^{er} for handles	£	s.	d.	Shank, beam	0	3	6
Do. covers for manholes, Jones' patent double air-tight, 26in. by 20in., painted	2	10	0	Water, clean, fresh, including delivery under one mile per ton of 224 gal.	0	3	6
Putty, best, galvanised	4	7	6	Water, clean, fresh, supplied by East London Water Company .. per yd. cube of concrete	0	0	1
Adhes., snail's tongue	0	0	3	Wages, labourers per hour	0	0	7
Palast, burnt clay .. per yd. cube	4	6	0	" bricklayers	0	0	6
Rollast, Thomas	0	4	6	" "	0	0	10

(To be continued.)

To be continued.)

ILLEGAL WORK.—A subject was called in the case of Messrs. Doulton and Co., Ltd., and the defendants for the erection of an infectious fevers hospital at Hither Green, Lewisham. A great part of the work had been let to Messrs. Berry and Sons, Messrs. Doulton, of Lambeth, and Messrs. Barry and Sons, of Westminster. The work was done by Messrs. Berry and Sons, who were the sub-contractors. The contract provided that the plaintiffs should, at their own cost, execute "the works" of the hospital, including the heating apparatus. The time in which the work was to be done was two years, and the price was £11,900. The plaintiffs provided for the retention by the defendants of £10,000 as security for its due performance. A sub-contract was made between the plaintiffs and the architect. Among the works to be erected were 29 chimney-stacks, and with reference to them a correspondence took place between Mr. Edwin T. Hall, F.R.I.B.A., the architect of the defendants, and Messrs. Doulton, as the result of which the defendants undertook to do the necessary work. Part of the claim in the action arose from the alleged delay on the part of Messrs. Doulton in doing the work. A sub-contract was made from a sub-contractor for the supply of the necessary steam boiler and piping. On February 24 a sub-contract was made between the plaintiffs and Messrs. Berry and Sons, by which the latter agreed to supply this apparatus for £11,900. It was alleged that Messrs. Berry had also been guilty of delay in executing this work. Owing to these alleged delays the plaintiffs could not complete their works and get the architect's final certificate and payment accordingly. They therefore claimed damages on the footing that there was an obligation upon the defendants to see that the work was done by the specialists and sub-contractors within a reasonable time. The claim was referred to Mr. Pollock, one of the Official Referees, who considered the contract and voluminous correspondence involved in the case. Counsel for the defendants contended that they were not liable on the ground that Messrs. Doulton and Berry and Sons were sub-contractors with the plaintiffs, and any claim for delay lay against them, and not against the defendants. The learned Referee held that the defendants were liable to the plaintiffs, and the defendants appealed from that decision to the Divisional Court, which held that the plaintiffs could not impose upon the defendants the consequences of the delay of the sub-contractors. The plaintiffs appealed. The Court, having taken time to consider, dismissed the appeal. The Master of the Rolls read a judgment, in which he said that the plaintiffs were to provide everything to make the hospital complete, and that, although specialists were to execute some of the works so contracted to be executed and provided by the plaintiffs, these latter works formed part and parcel of the entire works, for which the defendants were to pay the plaintiffs the sum of £210,688, the plaintiffs out of this sum paying the specialists. His lordship, after examining what took place with regard to Messrs. Doulton and Co., the arrangements with them having been carried through by Mr. Hall, the architect, said that he had come to the conclusion that the defendants could not be liable to the plaintiffs for the delays of Doulton and Co. The defendants had never contracted with Doulton and Co. The persons who contracted with Doulton and Co. were the plaintiffs, and the plaintiffs alone. The defendants throughout studiously avoided contracting with Doulton and Co., who were sub-contractors of the plaintiffs or their agents. Doulton and Co.'s work was work which the plaintiffs had contracted with the defendants to provide for in the £210,688. Doulton and Co. were paid by the plaintiffs, and by no one else. The Divisional Court were quite correct in holding that the defendants were not liable to the plaintiffs for the delays of Doulton and Co. If anyone had a remedy against Doulton and Co., it was the plaintiffs, and not the defendants. It was said that the plaintiffs only contracted with Doulton and Co. so as to get rid of the necessity of the defendants having to obtain the consent of the Local Government Board to a contract between themselves and Doulton and Co. However that might be, there stood the plaintiffs' undoubted contract with Doulton and Co., upon which beyond doubt the plaintiffs could sue Doulton and Co., and the defendants could not. It was next argued that if this was so, and the plaintiffs sued Doulton and Co. for delays, they would do so as trustees for the defendants; and that if the plaintiffs recovered damages from Doulton and Co., they would have to hand over the damages recovered to the defendant. His lordship said that the truth was that there was no trust at all. With regard to Messrs. Berry and Sons, the above remarks applied to their case, if they were sub-contractors of the plaintiffs. The appeal must be dismissed, with costs.

ILLEGAL COMMISSIONS.—At the Conway County Court, April 17, Messrs. Jones and Son, plumbers, Conway, sued Hugh Abram, miller, Glyn, Conway, for the recovery of £24 for material and labour in erecting two houses which the defendant erected at Conway. The action was remitted from the High Court. Mr. Bliss Hill, Colwyn Bay, appeared for the plaintiffs, and Mr. James Porter defended. Mr. Bliss Hill stated that Messrs. Jones and Son contracted for the plumbing work of the houses which in 1894 Mr. Abram was erecting in Cadnamt Park for Mr. J. W. Hughes for £178. A sum of £24 was incurred additional to the estimate. Edward Lloyd Jones, of the firm of Jones and Son, gave evidence. He stated that some time after the contract was entered into Mr. Abram requested him to make some reductions, in respect of a reduction in the size of water-tanks and of some water-closets which would not be required. Witness allowed £14 for these items. In October, 1895, Mr. Abram complained that the lead piping used was of the weight of 9lb. to the yard instead of 12lb., which he alleged was the weight specified. He consented to allow 30s. in respect of that complaint, although he did not consider himself liable, there having been no specification of the weight except in a marginal note. The whole work was thoroughly well done, the usual weight for such piping being 8lb. to 9lb. He had had several promises of payment by the defendant, and had pressed for particulars of objections; but they had not been given. Cross-examined by Mr. Porter, the witness declared that he only saw two pages of the specification, which referred to the work he was to do—and those were only shown to him for the purpose of pricing. A document was laid before him by Mr. Porter; but he declared that the two pages dealing with plumbing and ironmongery were not the same as those he had worked upon, and contained details not included in the pages he saw. Plaintiff was questioned as to a further concession in price, which it was suggested he had made, and he denied that he had made any such concession. A paper, understood to be an estimate by plaintiff, was submitted to him, and he declared that the part on it of referring to a reduction of price was not in his handwriting, though the writing was a close imitation of his hand. David Morris Roberts, architect, Conway, was next called, and said he was the architect who prepared the plans for the houses in question. The plumbing work, &c., was done by Messrs. Jones and Son to his satisfaction. He denied that he complained to Mr. Abram about Mr. Jones's work; but Mr. Hughes, the owner, took a great deal of the superintendence upon himself. As to the lead piping, 9lb. to the yard was always specified in Conway. A clause in the contract specified that the award of the architect in all cases of dispute should be final. No call had been made for his arbitration under that clause, and he had been paid off by Mr. Hughes. Cross-examined by Mr. Porter, the witness said he ordered the grates for Mr. Hughes, and got a commission of 2½ per cent. on the transaction. He probably also received a similar commission on the slates. Is it a proper thing for architects to get a commission on goods?—It is a general custom all over the country. I have got a few architects here who practise in this neighbourhood, and they all contradict you.—There may be exceptions to the rule; I do not think they can. You were supposed to be Mr. Hughes's architect, and to see that he got the best goods, according to the specification, and yet you were getting a commission on those goods yourself.—I got about 15s. If I was ordering them and recommending them, and finding him a cheap market, why should I not get the commission? They knew I was getting it. You admit you were getting paid by Mr. Hughes, and by the gentleman who supplied the goods?—Yes, about 15s. Does that remark apply to all the contracts for which you act as architect?—No, not at all. But you said it was the usual thing, and I take it that wherever you acted as architect in this neighbourhood, you got the commission for the goods?—If I got an order I did so. There is nothing underhand about it. If I go about the country buying stuff for clients, it is right that I should be paid for it. It is no part of your duty as architect to take journeys and buy materials?—No; but if it assists my clients, I do so. His Honour: You say this payment of commission is a common thing? Witness: It is. His Honour: How do architects do when they get things that they have to condemn? Witness: They do not condemn in that case. His Honour: How is an architect to exercise an independent judgment as to the sufficiency and quality of materials coming on to the job if he is getting a commission on them? Witness: These commissions are usually for grates, &c.; things about which there could be no complaint. His Honour: Suppose they came in a damaged or cracked condition. It would be the architect's duty to say so. Is he not rather hampered in his judgment and his discretion by the fact that he has a commission on them? The witness: He gets a commission for doing work, for helping the builder. His Honour: For doing work that may be inconsistent with his duty? Witness: Perhaps so. It is done all over the King-

dom. His Honour: All I can say is, it shows the necessity for the Bill that has been introduced into the House of Lords to stop illicit commissions. Replying to Mr. Bliss Hill, the witness said that if there had been anything wrong the builder himself would have complained. His Honour said there was competition in the open market, and some gave more commission than others. The man who gave the highest commission probably got the order, and then he wanted to know what sort of a position the architect was in if the materials, when they came on the job, were not fit for the purpose. Witness: The architect would choose a good firm, so that there would be no complaint. It is a well-known fact. All my clients knew I was getting it. There are clients in the room for whom I have purchased grates, &c. His Honour: You are honest enough to say that. We won't go into it any more. This inquiry is quite complicated enough of itself. Hugh Abram, the defendant, said he sub-let all the work except the joinery. He gave the plaintiffs the original specification and the plans; he had no other document. Complaint was made of the materials and of the work done by plaintiffs. Although notice of a counter-claim had been given, it had not been made. J. W. Hughes, owner of the houses, said that he still owed Mr. Abram about £90, including the extras, and until the dispute as to what he considered to be the dishonest work of the plaintiffs was decided he could not settle up. Replying to Mr. Bliss Hill, he said he was sued for rates recently at the police-court and pleaded the statute, but he did so on principle, and did not owe a half-penny to anyone except Mr. Abram. The hearing was then adjourned till the next court.

ILLUMINATED SIGNS.—At the Marlborough-street Police-court, on Friday last, the Prince's Hall Restaurant, Limited, were summoned at the instance of the London County Council in reference to certain illuminated signs erected at the new grillroom entrance of Prince's Restaurant, Piccadilly. Mr. Chilvers, of the solicitors' department of the Council, supported the summons, and Mr. A. H. Bodkin, barrister, appeared for the defence. Mr. Chilvers stated that the summons was taken out under section 200, sub-section 3, of the London Building Act, 1894, as amended by section 7 of the Amendment Act of 1898, and was for a penalty and an order for demolition. He further stated that the defendants, through their architects, applied to the Council in May, 1900, for consent to the erection, beyond the general line of buildings, of a shelter at the entrance to the new grillroom, which the Council, however, declined to grant. From a survey made at the time, however, it was found that the defendants had already erected three illuminated signs, which were to form part of the shelter, which were wholly in advance of the general line of buildings. An amended application was subsequently made for the erection of a modified shelter, which the Council had agreed to consent to upon condition that the illuminated signs and the lamp-posts to which they were attached were removed. The defendants objected to the conditions, and would not accept the consent, and had left the signs projecting beyond the general line of building, which he (Mr. Chilvers) now contended formed a structure within the meaning of section 22 of the London Building Act, 1894, and asked for an order for their demolition. For the defence, Mr. Bodkin admitted that the facts were as stated, but contended that the signs were not a structure within section 22 of the London Building Act, 1894, and in support of his contention he referred to the decision of Mr. Justice Darling in the case of "The Coburg Hotel v. the London County Council," and Mr. Bodkin stated that the late vestry had taken proceedings for the removal of the signs under the Metropolitan Management Acts, but had not been successful, as the County of London Sessions had quashed the conviction by the magistrate, and the vestry had to pay his clients over £40 for costs. Mr. Denman, the magistrate, in giving his decision, stated he was of opinion that the signs formed a structure within the meaning of section 22 of the London Building Act, 1894, and as these proceedings had nothing to do with those taken by the late vestry, he must convict the defendants of the offence for which they were summoned. He would, however, only impose a nominal penalty of 1s., but he should make an order for the demolition of the structure within two months, and for the defendant to pay the Council £2 2s. for costs.

The marriage of Miss E. A. Craven, second daughter of Sir Robert Craven, of Hull, to Mr. John Bilson, architect, Hull, took place in St. Mary's Church, in that city, on Tuesday.

At Tuesday's meeting of the London County Council, the Improvements Committee brought up a recommendation in favour of the Council's contributing £16,800, one-half the net cost of widening to 50ft. of Blomfield-street, City, between East-street and Eldon-street, proposed to be undertaken by the City Corporation. The recommendation was adopted.

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ILLUSTRATIONS.

CAPTAIN A. ROYAL NAVAL COLLEGE, DARTMOUTH. -
THE EAST ASSEMBLY HALL, NEW TOWER, LONG MELLORD
CHURCH - HOUSE AT ORRINGTON, - HOUSE AT BROMLEY.
A HOUSE OVER MOUNTAINS. A LOGGIA IN A FRENCH
HOUSE.

Our Illustrations.

BRITANNIA ROYAL NAVAL COLLEGE, DARTMOUTH.
SICK QUARTERS.

These buildings are being erected by the Lords of the Admiralty at the new college, on a site with fine views of the sea and mouth of the Dart. They consist of three blocks: two infectious and one non-infectious, which contains the kitchens, &c., and provide accommodation for a total of 64 beds. There is also a day-room block and an infirmary block, and a small house for the doctor. The walls are faced with red bricks and Portland stone dressings, and the roofs covered with Delabole slates. The buildings are being erected by Messrs. Higgs and Hill, and the clerk of works is Mr. S. E. Wallis and Mr. C. H. Hill. Mr. Aston Webb, A.R.A., is the architect.

BELFAST ASSEMBLY-HALL COMPETITION.

This design was awarded the first premium by the assessor, Sir Thos. Drew, R.H.A.; but the committee declined to accept any of the designs submitted in this competition, and appointed a firm of Belfast architects to carry out the work. The result of this competition was so unsatisfactory as to elicit formal protests from the R.I.B.A., the R.I.A. of Ireland, and the Belfast A.A. The perspective view appears in this year's Academy.

THE TOWER, LONG MELLORD CHURCH, SUFFOLK.

This beautiful church was long disfigured by an altogether incongruous brick tower of Georgian date. It was a very massive and substantial structure with walls 5ft. thick, but without any architectural beauty whatever. What has been done is facing the whole of the tower with napped flint and stone dressings so far as it is carried out. There is a good deal of rich inlay of flints on the stone of the plinth and other parts, after the manner of Suffolk and Norfolk work. The west doorway is deeply recessed. It is to be hoped that the rich parapet and pinnacles, not yet taken in hand, may be completed before long. The work is the design of Mr. G. F. Bodley, A.R.A., and the drawing is illustrated in the Royal Academy Exhibition this year.

TWO HOUSES IN KENT.

THESE two country residences, from the designs of Messrs. Niven and Wigglesworth, show a differing style of treatment, though both are very picturesque and prettily drawn. The house at Orrington, standing overlooking its gardens on a terrace of two slopes, is finished in half-timber; that at Bromley is rendered with rough-cast.

A LOGGIA IN THE DINING-HALL OF A FRENCH HOUSE.

THIS alcove recess was designed for the Paris Exhibition, and formed part of the exhibit shown by Messrs. Krieger, Damon, and Colin, whose

cabinet-work is of a high class for finish and precision of detail. The work displays a degree of novelty more German in type than French, though the whole design may be regarded as essentially an exhibition effort, and in this light the work must be judged. We are indebted to the *Moniteur des Architectes* for the photograph from which the accompanying illustration was taken.

CHIPS.

In the case of the London County Council General Powers Bill, the standing orders have been dispensed with to allow an additional provision to be inserted to enable the Council to accept the gift, for the purposes of a public park and museum, of Surrey Mount, Lewisham, and certain lands, and the museum known as Horniman's Museum.

Sir Archibald Geikie was entertained at dinner on Wednesday night at the Criterion Restaurant, on the occasion of his retirement from the Director-Generalship of the Geological Survey. Lord Avebury presided.

Mr. J. Passmore Edwards yesterday laid the foundation-stone of the new hospital at Sutton, Surrey. An address was presented to Mr. Passmore Edwards on behalf of the working men of the town, expressing their gratitude to him for his beneficence. The Governors of the hospital also presented Mr. Passmore Edwards with a handsomely-chased silver trowel. It is estimated that the cost of the building will be about £3,000, and the total amount necessary to defray the whole of the expenditure about £4,000, which Mr. Passmore Edwards is defraying. The site of the the hospital is in the centre of the town.

At a conference between Buckie Town Council and Messrs. Stewart and Son, contractors, Peterhead, on Friday, the protracted negotiations in connection with the reconstruction of the Victoria Bridge across Buckie burn, which fell on the eve of completion nearly three months ago, were brought to a satisfactory issue. The arrangement is to the effect that Messrs. Stewart should receive £1,000 for reconstruction upon a plan and greatly improved specification prepared by Mr. Barnett, C.E., Aberdeen. Messrs. Stewart's first offer was for £1,641. The matter is, therefore, settled by concessions by both contractors and town council in voting the paying of one-third of the loss by the town council, one-third by the contractors, while the remaining third is for the improved specification.

The affairs of Alfred Harry Saxton, wholesale cabinet-maker, carrying on business as the King-street Cabinet and Upholstering Company and as the Norfolk Furnishing Company, at Norwich, were investigated at the Norwich Bankruptcy-court. The liabilities were stated at £5,532, and the deficiency £3,924. Debtor attributed his insolvency to inexperience of cabinet-making, bad trade, competition, and trade losses. The examination was adjourned.

At the last meeting of the Edinburgh Architectural Society Mr. Harold O. Tarbolton, the honorary president, delivered an address, and afterwards presented the prizes gained in the design competition throughout the session. The prizes were awarded as follows: Hon. President's Prize of £10, Mr. George Wittel; President's Prize of £3 3s., Mr. Wellesley Bailey; Vice-President's Prize of £2 2s., Mr. F. C. Mears.

Mr. F. C. Measitt laid, on Wednesday, the foundation-stone of a new synagogue in Princess-road, Queen's-road, Finsbury Park. The land on which the building is being erected is held from the Ecclesiastical Commissioners for a term of 999 years. When completed, the building will give accommodation on the ground floor for 190 male worshippers, and in the galleries for 144 ladies. The exterior is being faced with red brick relieved with stone dressings. Mr. Delissa Joseph, F.R.I.B.A., is the architect.

The triennial report of the committees of the Liverpool City Council, embodying recommendations for the advance of the salaries of officials, amounting in all to about £6,000 per annum, has been adopted by the council. In nearly every case the adoption was unanimous, and an amendment to increase the salary of the city engineer (Mr. J. A. Brodie) by £200 beyond the recommendation was agreed to after a discussion, in appreciation of his services, especially with respect to the laying of the electric tramways. The salary of Mr. A. Bromley Holmes, city electrical engineer, was raised from £1,600 to £1,800; that of Mr. Joseph Parry, water engineer, from £1,200 to £1,400; and that of Mr. William Goldstraw, building surveyor, from £450 to £500.

In the case of the application made on behalf of Robert Pryde and James Lawson, trading as Pryde and Lawson, of Teddington, builders, the order of discharge from bankruptcy has been suspended for three years, ending March 22, 1903.

Building Intelligence.

THE new church of St. George's, which was opened on Saturday by the Bishop of Ripon. Seats of polished pitch-pine take the place of the old "box" pews in the nave, and a new gallery front in open pitch-pine has been constructed. An open-timbered roof of stained pitch-pine has been substituted for the unsafe flat plaster ceiling, and the entire area of the building has been covered with a layer of concrete 6in. thick, while new wood-block flooring has been laid in the passage. The east wall has been broken through, and a chancel-arch of stone built, together with an apse with wall arcading and five traceried windows. A clergy vestry has been erected on the south side of the apse. The restoration has cost, including special gifts, £7,500. The structural alterations, including the apse and the roof, were designed by Mr. Henry Walker, architect, of Leeds; and the interior screenwork, stalls, pulpit, gallery front, &c., are from the designs of Mr. G. H. Elliott, of Lightcliffe, who supervised the whole of the work.

UPPER KNOWLE. THE new church of St. Martin's, Upper Knowle, was consecrated last week by the Bishop of Bristol. The site is on the eastern side of the main road from Bristol to Wells, and the architect is Mr. W. V. Gough, of Bridge-street, Bristol. The church is in the Early English style, and will eventually accommodate 700 persons. To have carried the whole out at once would have required an outlay of £7,000, and the chancel, vestries, organ-chamber, and three bays of the nave and aisles have been built, giving room for a congregation of 400 persons. This work has been carried out by Mr. E. W. Durnford. The walls are of Pennant, with Bath stone dressings; in the interior the surface is stuccoed, the window arches are of red brick; the nave and aisles are separated by freestone columns, carrying pointed arches, also of brick, but relieved with Bath stone mouldings. The chancel and altar steps are of red Pennant.

At the Norwich Consistory-court, the Chancellor has granted a citation for a faculty enabling extensive repairs to be made to the parish church of Whetton-cum-Thurleston, on the outskirts of Ipswich. It is proposed to repair and re-cover the roof of the nave, which is at present covered with tiles. It is also proposed to build a new vestry, an organ chamber, a heating chamber, and porch, to lay down hot-water heating apparatus, to give more light by inserting a window in place of the south chancel door, and to gain about 19 new sittings by rearranging the seats. The cost is estimated at about £800.

Lord Londonderry has unveiled at Bath memorial tablets placed on the houses of Ralph Allen and John Palmer, the two great postal reformers of the 18th century.

The Kirkcaldy district committee of the Fifeshire County Council have appointed Mr. George Donaldson as road surveyor for this district at a salary of £250 per annum. There were forty-nine candidates.

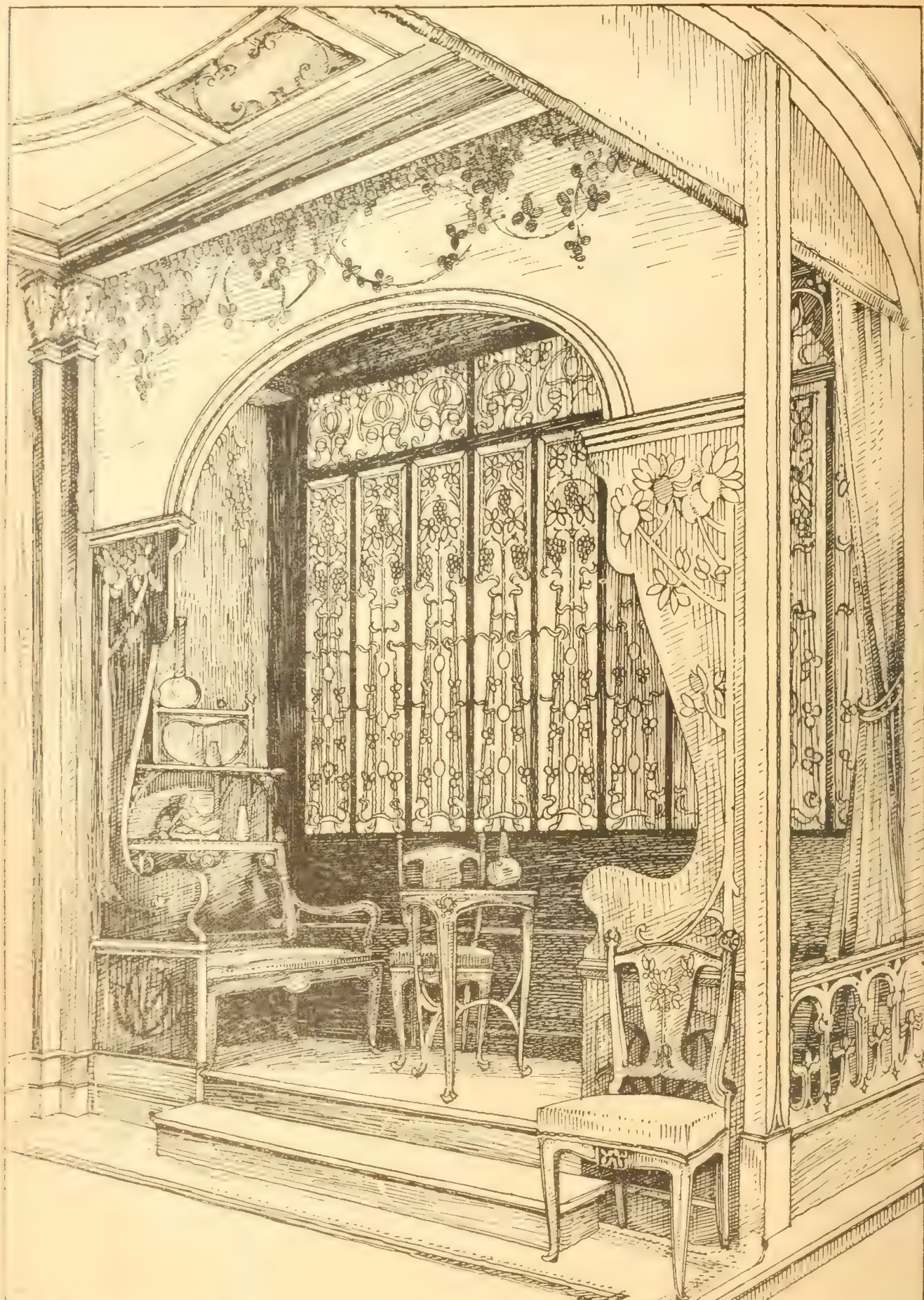
A communication by loop lines is now being established between the systems of the South-Eastern and Chatham Railways between Bickley and Chislehurst.

The Middlesex County Council has notified the Light Railway Commissioners of an intention to apply for powers to construct electric tramways from Tottenham, through Wood Green and Friern Barnet, to a point near Colney Hatch Asylum; and from Highgate Archway, the London boundary, along Archway-road and Great North-road, to the Hertfordshire boundary near Whetstone. A spur line is contemplated from Highgate Railway Station to the Muswell Hill entrance of the Alexandra Palace and park. The Finchley District Council contemplate a tramway of their own to join the proposed Finchley and Hendon lines.

At Woking, on Thursday in last week, sheds and machinery belonging to Messrs. Berry and Sons, timber merchants, were destroyed by fire. The damage is estimated at over £2,000.

Messrs. Keiller's new works, Silvertown, Essex, are being ventilated by means of Shorland's patent exhaust ridge ventilators, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

The Hull Corporation have instructed the City architect to prepare plans for a new corn exchange, to be erected over the proposed covered-in market on North Church Side.

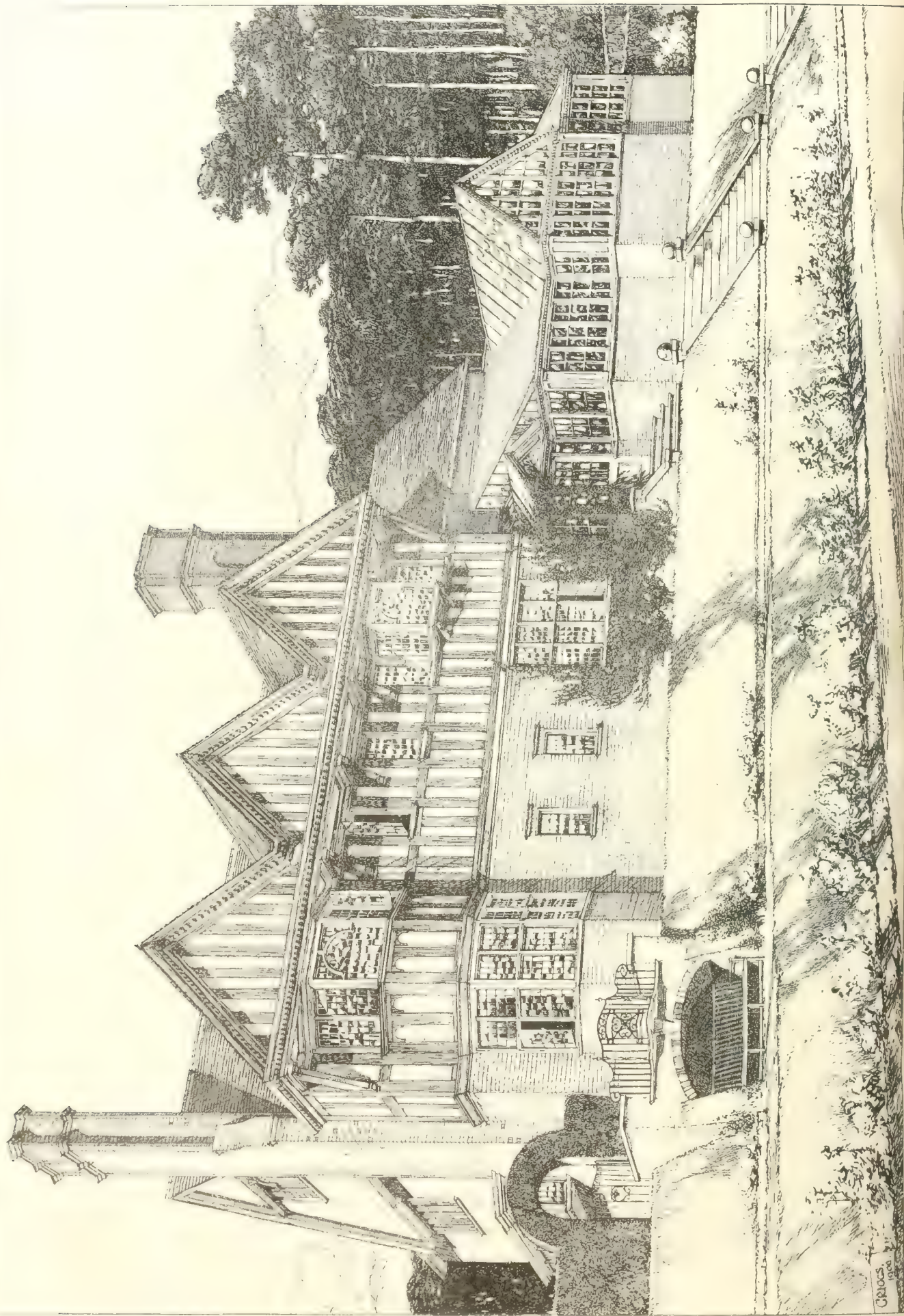


A LOGGIA IN THE DINING HALL OF
A FRENCH HOUSE

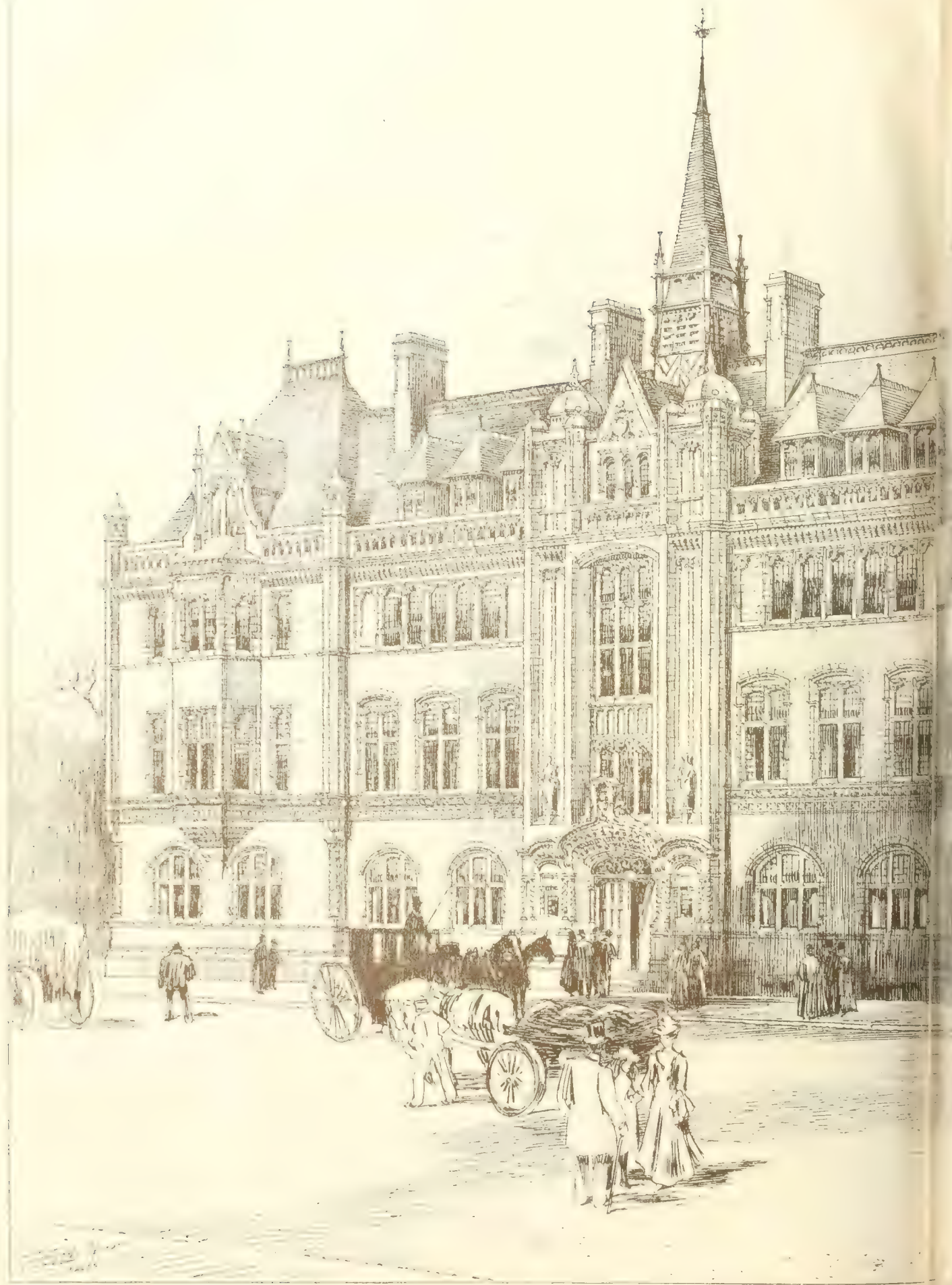
- EXHIBITED AT THE LATE PARIS EXPOSITION -

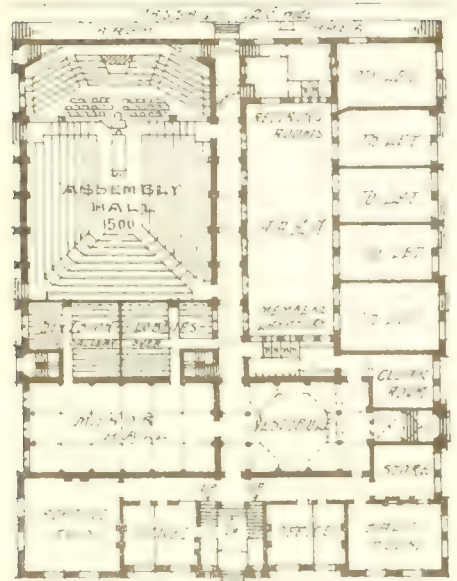
C. J. W. & Co.







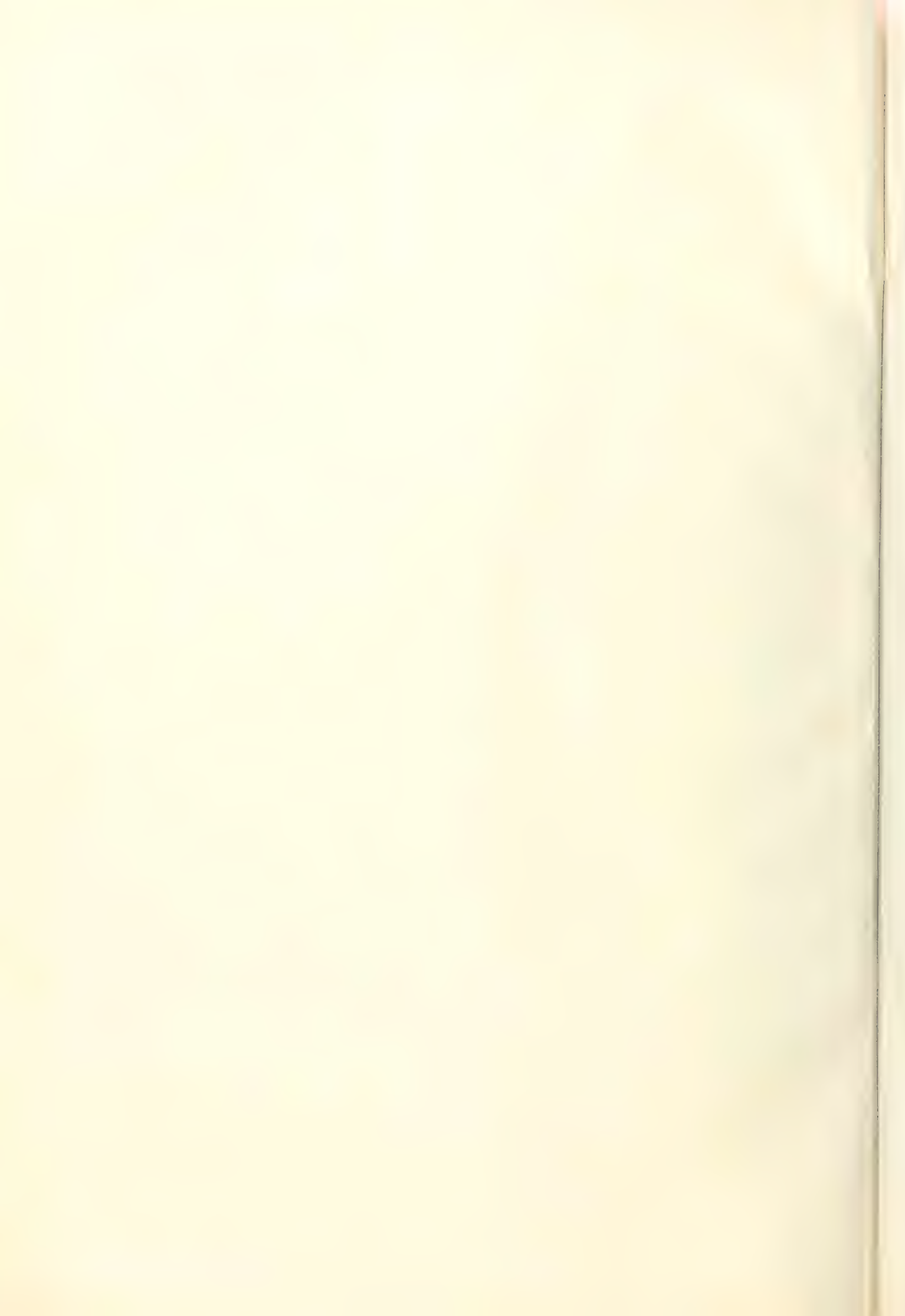


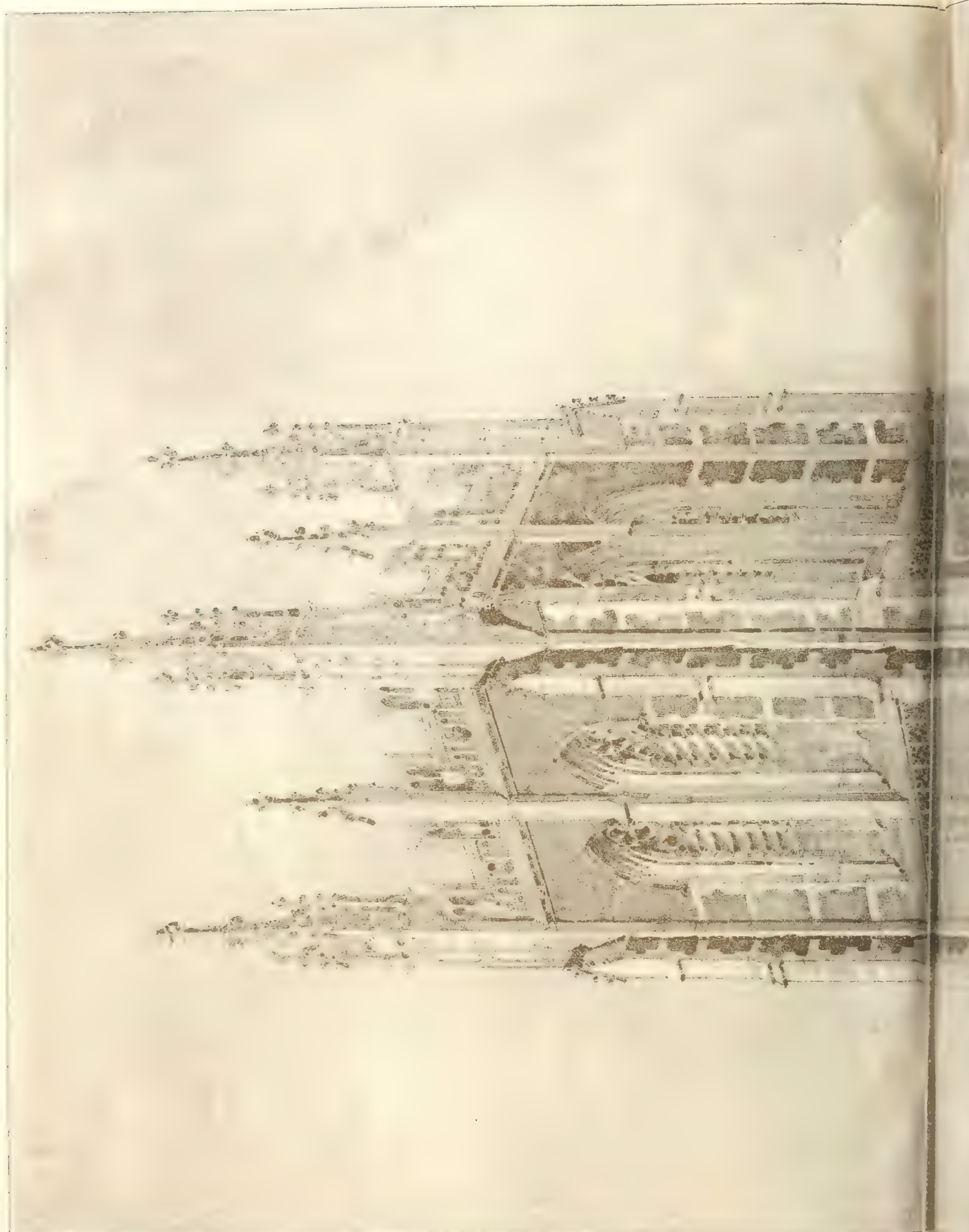


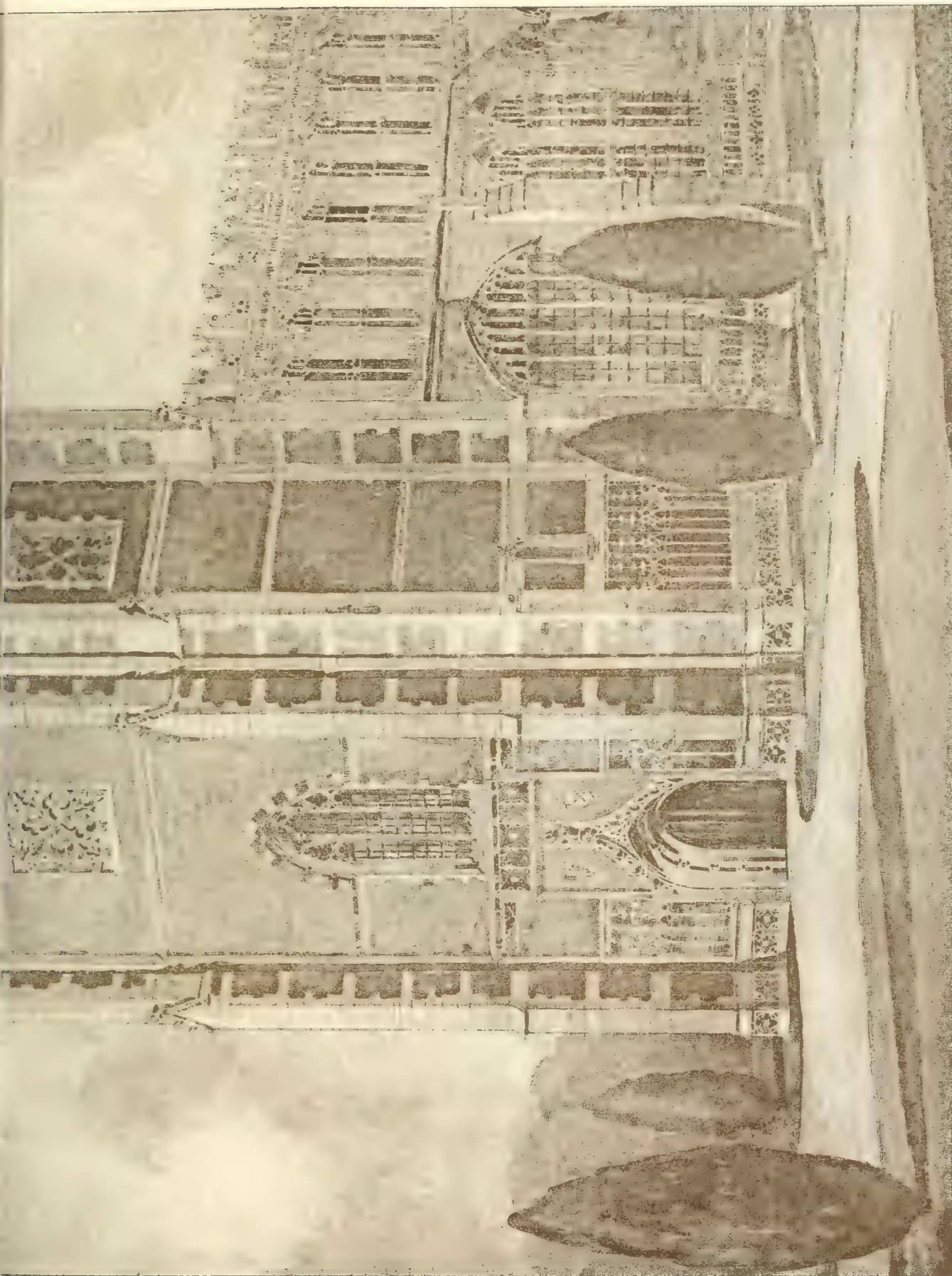
GROUND FLOOR PLAN



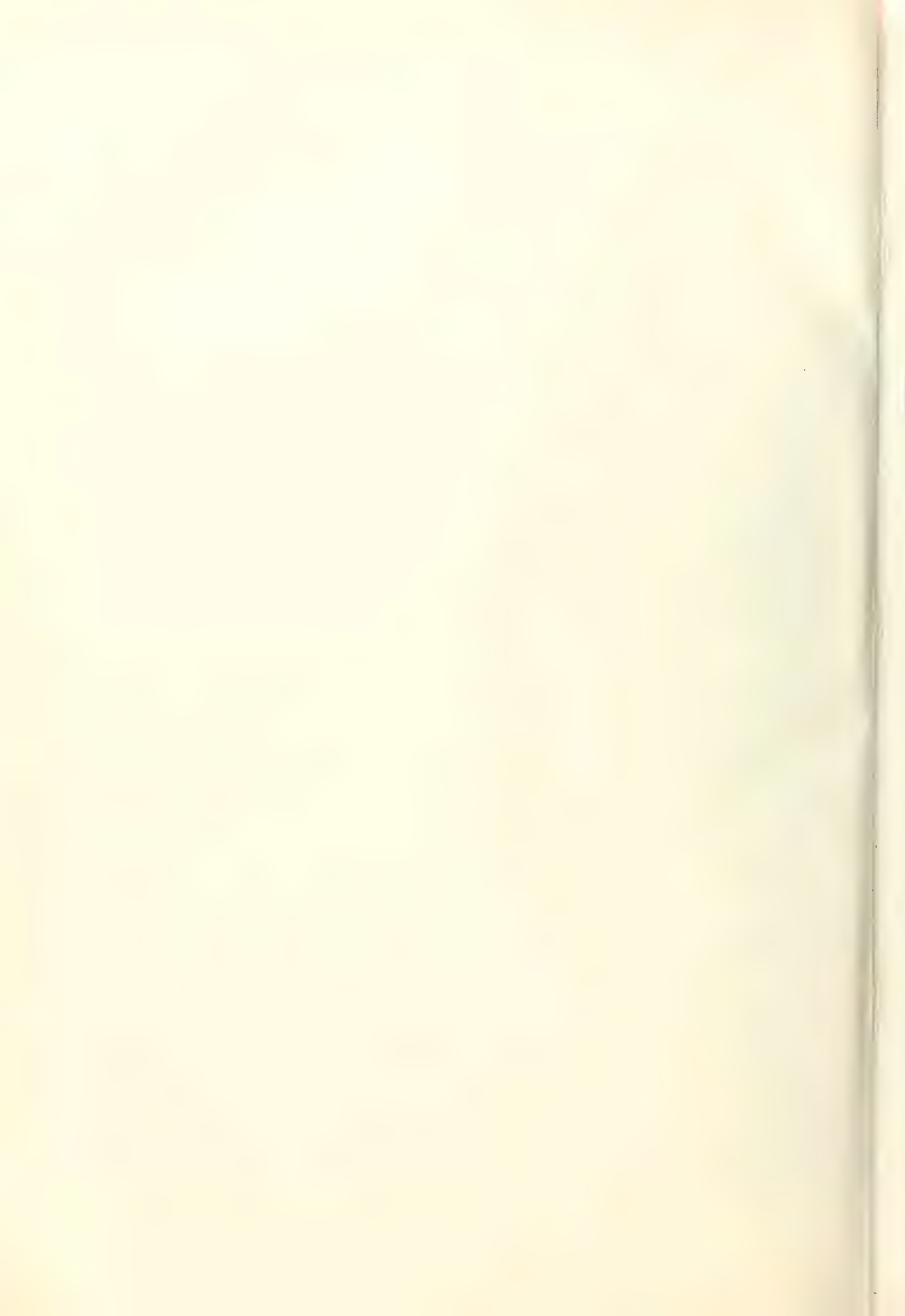
Robert George Bell

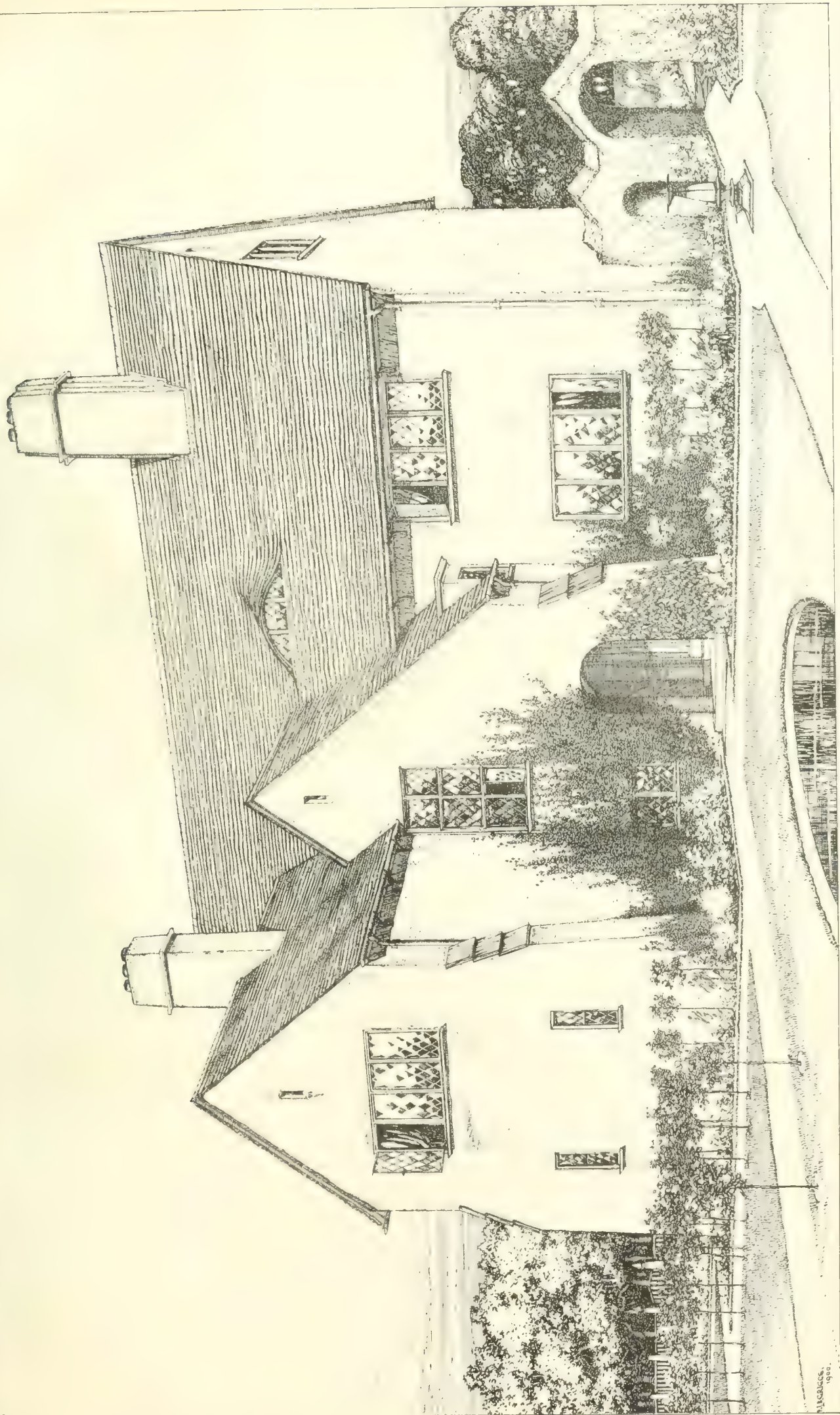






NEW TOWER LONGMELFORD CHURCH, SUFFOLK. G. F. BOBLEY-ARA ARCHT.





HOUSE • BROMLEY KENT

NIVEN & WAGLEWORTH ARCHT.

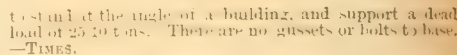


A TRAMP OVER MONT CENIS. BY HARRY HEMS. See Page 586.

The Ascent of Mont Cen's from Susa Piedmont. Photographed August, 1900.

Intercommunication.

11749 **Capacity of Cast-Iron Columns.**—I should be glad if some fellow reader would give me a reliable formula for arriving at the capacity of a cast-iron column, similar to the one I sketch. The column is intended



[11711.]-**Gauged Brickwork.**—Will some practical reader tell me how this is measured when it only comes in piers and small pieces of facing between stone dressings? —A. Z.

[11712].—**Fireproof Lining for Wooden Buildings.** Is there any material that can be used to cover the walls of wooden offices and workshops that would protect them from fire? I should like to know also how it can be fixed to the studs, and the cost. —K.

[1713].—**Substitutes for Plaster.**—Can anyone give me particulars of a thin casing that could be used instead of plaster for cottages, and save the delay of drying and papering? I have heard there is a material like cardboard that can be fixed, and has all the advantages of plaster. Should be glad to receive the name and cost of it. Can a rural authority interfere with the use of such a material?—YOUNG.

11714. —Drawing of Moments of Beam. —A beam supported at ends is loaded at a point with 10 tons. How is the diagram of moments drawn? Will someone kindly explain? —A STUDENT.

[11715].—**Wind Pressure on Circular Chimney.**
I want to find the moment of wind pressure on a round chimney-shaft. Is there any easy rule?—IGNORAMUS.

1176.] **Civil Engineering.** "Constant Reader," had better enter some office as an article pupil, where he would be soon put in the way of studying the subject. Book-reading alone will not instruct him. If he does not become articled, he may enter the classes of the above subject at King's College or University College, where he would obtain all the necessary information about examinations. The subjects to study are numerous; but a beginner should first learn to become proficient in elementary mathematics and mechanics, which are of the utmost value as a groundwork. Land surveying and levelling, roadmaking, building construction, sewerage, and water supply are all necessary qualifications; but it is impossible to give a complete list unless the particular class of practice to be followed is known. More is to be learned by getting into the "groove" and then picking up those studies which the beginner feels himself most in need of. No man can be taught a profession like this, by telling him he must read or study so many books. A great deal can only be learned by practice in office and on works. G. H. G.

[11708].—**To Remove Colourwash.**—Red wash for bricks being usually made of glue, alum, Venetian red, and Spanish brown, may be possibly removed by hot water, the alum in it is a difficulty probably, or some detergent. If either works all right, dry rub with brick and repoint, or inquire about Kipolin as a splendid in or outdoor paint. - REGENT'S PARK.

[11709].—**Pressure on Lead Pipes.**—N. Beardmore, in 1850, published, through Waterlow and Sons, hydraulic tables, strength of materials, &c., that may be of service. REGENT'S PARK.

[11709].—**Pressure on Lead Pipes.**—Old Subscriber "could find what he wants in most handbooks, such as D. K. Clark's "Manual of Rules, Tables, &c." It may be of interest to him to know that a lead pipe of 1 in. bore will stand a head of water of 160ft., a 3 in. bore pipe 190ft., a 4 in. 240ft., and so on, the safe head of water diminishing with the increase of internal diameter of the pipe.—G. H. G.

The transactions of last week at the Mart showed some interesting dealings. The chief incident was the disposal at £71,000 of licensed property at Paddington. The sales of the week, which were almost all of property, amounted to £182,825.

Now, Sir, is one of the ablest practising architects in this part of the country, over thirty-four years, I beg to deny the statement made by Mr. Roberts, and say most strongly that no respectable architect, or one of any good standing, ever thinks of obtaining commission for the various materials ordered by the architect from the various tradesmen. I consider the statement a slander upon a respectable body of professional men, and I trust the solicitors for the defence will thoroughly probe the matter, and obtain strong evidence to controvert the accusation. And, as the judge, Sir Horatio Lloyd, remarked, it shows the necessity for the Bill that has been introduced into the House of Lords, to put a stop to illicit commissions, being passed.—I am, &c.,

R. Gr. THOMAS, M.S.A., &c.,

Architect and Surveyor.

Menai Bridge, April 30.

500c.c. tubular measure, with 100 markings, are about 10in. between zero and containing mark. Cork or place the palm of the hand over the mouth of the tube, and shake up for a couple of minutes so as to well mix. Twist in fingers to get equal settlement of the cement, and stand by for an hour so as to clarify. Then from a saturated solution of ammonium oxalate pour in up to the 500c.c. mark. At once a white cloud of lime-oxalate will form, which allow to settle for a couple of hours and note height above the cement.

The space of 1 mark will equal 1 free line in the cement	
Ditto 1 mark	ditto 1 ditto ditto
Ditto 2 marks	ditto 2 ditto ditto
Ditto 3 marks	ditto 3 ditto ditto
Ditto 4 marks	ditto 4 ditto ditto

These percentages are approximate only, and purposely given slightly in favour of the contractor. To cleanse the tube after use, gently disturb the cement with a piece of twisted wire, shake up and throw away. Pour in a little hydrochloric acid to free any adhering substance, after which on rinsing with water the tube is again ready for use. A saturated solution of barium chloride will reveal the presence of gypsum in the same way, but in this case $\frac{1}{2}$ a mark will indicate 1 per cent, while 1 mark will indicate 2 per cent., &c. 1 am, &c.,

J. PAVNITT

3, Lime Villas, Green-lane, Birmingham.

Cranoe parish church, is going to have an improvement in the shape of a reliable church clock placed in the tower. Messrs. Wm. Potts and Sons, clock manufacturers, Guildford-street, Leeds, will supply and fix the new clock. Messrs. Wm. Potts and Sons are also making a new clock for Holy Trinity Church, Ulverston, North Lancashire, and a new hour-striking clock for Mr. C. L. Bell, J.P., at the old family mansion, Woolsington Hall, Northumberland, and have in hand a large illuminated clock for South Durham.

Messrs. Langham and Osborne, of Ramsgate, the architects of the Isle of Thanet hospital, have decided to lay the whole of the wood-block floors on the "Faweett" system. There are about 2,500sq. yards.

An inquiry on behalf of the Local Government Board was held on Friday at the office of the urban district council, Llandudno, by Mr. A. A. G. Malet, inspector, with reference to applications by the council for leave to borrow £4,700 for gasworks purposes and £16,301 for works of water supply. Mr. E. P. Stephenson, engineer, explained the proposals.

The memorial-stone of the Cannon Reading-room, at Westleton, East Suffolk, was laid on Monday by Lady Constance Banne. The architect is Mr. J. Shewell Corder, of Ipswich, and the builder Mr. Gibbs, of Saxmundham.

The Bishop of Kensington, on Saturday, dedicated the new part of Holy Innocents Church, Hammersmith, which has recently been added on to the original structure. The addition formed parts of the building scheme, the church only having been erected ten years ago, and the whole cost has amounted to £15,000. Mr. James Brooks and Son are the architects.

Correspondence.

PUBLIC COMMISSIONS.

THE BIRMINGHAM NEWS

So, I have just found a cutting from the *Liverpool Mercury* of April 26, giving an account of the fire, and stating that Conway, Jones and Son, plumbers, Conway, v. Hugh Abram for the recovery of £1,247 for work done, &c. In the sum-

"BUILDING NEWS" DESIGNING CLUB.

A lot of 10,000 sq. ft. of ground, bounded by streets, and to be located in the suburbs of town on a plot facing south, 50 ft. wide, with a front entrance to the west of 100 ft. The main elevation is to front south, and the garden is to be kept as large as possible on that aspect. The site is practically level. The accommodation is to comprise two sitting-rooms, the living room to be the larger decidedly, and a good entrance hall, with the stairway screened from the entrance door. There are to be five bedrooms, a bathroom, and a box-room, with the usual kitchen offices on the ground floor. The servants' yard to be on the north side, and the tradesmen's door approach is to be commanded by a window from the house for supervision, without exposing those in the house to observation from without. Style left to the competitors. The house to be constructed of ordinary brickwork. Soil, 5 ft. to the inch; plans of each floor, two elevations, one section, and view; materials optional; economy and roominess essential.

and "Willie."

W. I. A. D.—J. B. and Co.—F. W. G.—
K. M. and Co.—B. S. D. C.—F. J.

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Handson, 11, the cases for Binding the Building News, price 2s., post free 2s. 4d., can be obtained from any Newsagent, or from the Publisher, Clement's House, Clement's Lane, Passage, Strand, London, W.C.

Volumes XXXI, XXXII, XXXIII, and XXXIV are now nearly, and
 shortly to be, published, at the same price as the earlier volumes, but post-
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 LXV, LXVI, LXVII, LXVIII, LXIX, LXX, LXXI, LXXII, LXXIII,
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 and LXXXX, may still be obtained at the same price; all the other bound volumes are out of
 print. Most of the back numbers of former editions are,
 however, to be had singly. Subscribers requiring any
 back numbers to complete their volume just ended should
 order at once, as many of them soon run out of print.

unsought contributions.

I am, Sir, Dear Mr. Editor, Very truly,
Yours,
J. H. P. [Signature]

Address: "The University," London.
[Postmark: No. 10, Pall Mall.]

[illegible]

Our Office Table.

MR. LACY W. RIDGE is continuing the opposition he raised at the R.I.B.A. a fortnight ago to the principle involved in the re-election of the President after the expiration of his two years' term of office. Mr. Ridge's amendment to the proposition of the council for the suspension of By-law 26 to allow of Mr. William Emerson's re-election to the chair was rejected the other night on a division, in which only Fellows of the Institute were eligible to take part, by 36 votes to 12; but at the annual meeting of the Institute next Monday night, Mr. Ridge has given notice that he will move: "That in the opinion of this meeting it is not desirable that By-law 26 be repeatedly suspended. The Royal Institute looks to the council to put forward each year a nomination for the Presidency, in accordance with the constitution of the Institute as laid down in the by-laws."

THE King has been pleased to approve the appointment of Mr. Arundel Tagg Arundel, C.S.I., at present a member of the Council of the Governor of Madras, to be a member of the Council of the Governor-General of India, in succession to Sir Arthur Charles Trevor, K.C.S.I., who is retiring. Mr. Arundel Tagg Arundel was one of the original members of the Society of Architects, and took an active and beneficial part in the work of the first council, in the uphill days of the society.

THE Tramways and Street Widenings Bill of the London County Council was before the Court of Referees of the House of Commons on Monday. The *locus standi* of no fewer than six sets of petitions was objected to by the County Council. The County Council ask for power to construct a new line from the Lambeth-road across Westminster Bridge-road, along York-road and Stamford-street, across Waterloo Bridge-road and Blackfriars-road, through Southwark-street to the Southwark Bridge-road. They also propose to take land near the Camberwell New-road Station of the Chatham and Dover line, for the purpose of constructing there a large electric generating station in connection with the scheme for working their tramways by electricity. The *locus standi* of the South-Eastern and Chatham and Dover Railway Companies against the Southwark-street portion of the proposed new line was objected to by the County Council. The railway companies, through Mr. Pember, K.C., alleged that the new line would produce serious competition with their local traffic between London Bridge and Charing Cross Stations, *via* Waterloo Junction, while, in connection with a line to Lordship-lane, it would compete with their suburban traffic. The Court decided to allow the petitioners' *locus standi* in regard to one of the propositions of the Council and with reference to competition in connection with another proposal. Among the other petitions discussed was one by the owners of the land on which is built the Catholic Apostolic Church in the Camberwell New-road, and in this case the Court disallowed the *locus standi*.

ONE of the fresh sources of revenue which Sir Michael Hicks-Beach neglected to tap, and to which he might very well have given favourable attention, was to put a stamp duty on advertisements displayed on hoardings. In March last the Chancellor of the Exchequer received, it appears, a memorial promoted by the National Society for Checking the Abuses of Advertising recommending the imposition of such a tax. It was pointed out that the development of advertising in public places constitutes a serious and growing evil, that it stands on a totally different footing to advertisements in newspapers, and Sir Michael was further reminded that in Continental countries the duty on *affiches*, regarded from the purely fiscal standpoint, has been a profitable one. The memorial was signed by one hundred representative men, including Mr. Alfred Waterhouse, R.A., Mr. T. G. Jackson, R.A., Mr. Ernest George, Mr. F. C. Penrose, F.R.S., Mr. S. F. Watts, R.A., Mr. Briton Riviere, R.A., Mr. Luke Fildes, R.A., Sir Noel Paton, Mr. W. Holman Hunt, and Mr. Hamo Thornycroft, R.A. But Sir Michael, as we all know, shut his eyes to this temptation, and preferred to squeeze the income-tax payer a little more, and to harrow the coal and sugar industries.

THE Improvement Committee of the Leeds

Corporation have just adopted, after discussion from the Leeds and Yorkshire Architectural Society, a new series of by-laws with reference to the construction of streets. These proposals have been for some three years under consideration, and it only remains for them to be sanctioned by the city council and the Local Government Board. They are intended to have the effect of improving the character of ordinary dwelling-houses, besides widening the streets. In future no street is to be less than 42ft. in width, but provision is made allowing streets to be made 36ft. wide with a forecourt (or garden) in front of the houses on each side of 6ft. in width, and at intervals of not more than 150 yards there must be a street not less than 42ft. in width. The existing by-law provided simply for a 36ft. street.

THE housing committee of the Liverpool Corporation have had under consideration a letter from the Local Government Board with reference to the draft of a provisional order which the board have caused to be prepared for the alteration of certain local Acts relating to the City of Liverpool. As to the additional borrowing powers which it was proposed by the draft order to give the corporation for the purchase and demolition of insanitary houses, the Local Government Board "consider it desirable that the council of the city should pass a resolution, undertaking to rehouse upon the cleared sites, or upon other sites to be approved by the board, such proportion (not being less than one-half) of the persons who may be displaced by such clearances as may be determined by the board, due regard being had in each case to the number of suitable empty houses which may be available, within a radius of a quarter of a mile from the insanitary areas, for the accommodation of the persons displaced." On receipt of such a resolution the Local Government Board would be prepared to issue the order, and to submit it to Parliament for confirmation. The city council at Wednesday's meeting accordingly passed a resolution giving the necessary assurance to the Local Government Board.

THE tympanum over the main entrance to the Industrial Hall of the Glasgow Exhibition contains an important example of a new departure in mural decorative treatment in ceramic material by Messrs. Doultons (Ltd.), of London, Burslem, and Paisley. This is what is known as their slab mosaic in Parian ware. The central space of the semicircular tympanum is occupied by a female figure seated on an ivory throne, and in the act of turning the pages of the Book of Progress. The background is formed of a massive light-house structure of masonry. The space beyond the throne to the right is occupied by fields and factories bounded by a broad river, while beyond the throne to the left are the broad waters of an estuary, with the latest types of marine architecture. One of the features of this Parian slab mosaic is the wide range of powerful and beautiful colours which it places at the disposal of the artist. The tympanum bears the signature of "Dimsie," which is the *nom de plume* of the artist responsible for the design and colour treatment. It bears also the well-known name of Messrs. Doulton, Lambeth.

THE Horse Parade in Battersea Park last Saturday, arranged by Messrs. Eastwood and Co., Ltd., was, as usual, a great success. In all there were 71 horses on the ground and 70 vans. The Pair-Horse Prize was awarded to John Deadman (40 years' service). The Single-Horse Prizes went as follows:—

Wells, Kent-road Wharf, 8 years' service	1st
Stratton, Wellington Wharf, 20 years' service	2nd
Hine, Mortlake Wharf, 17½ years' service	3rd
Hine, Chelsea Wharf, 5 years' service	4th
Page, Greenwich Wharf, 3 years' service	5th
Biggs, Greenwich Wharf, 1 year's service	6th

The Light Horse Prize was won by Dark, of Chelsea Wharf, with 16 years' service. In addition to the ordinary prizes, Mr. A. L. Wheeler, one of the directors of the company, gave a personal prize to Dark, of Chelsea Wharf, and Mr. Wragge, the managing director, did the same to C. Webb, of Haringay. The whole show looked first-rate, and when the conditions under which the carmen and horses work—a long day in dusty material—is considered, the turnout showed an amount of care which must have been given all the year round. On the ground, showing a great interest in the show, was, as usual, Mr. John Burns, M.P.; and Mr. Whiteley, M.P., also went along the line three or four times.

MEETINGS FOR THE ENSUING WEEK.

- MONDAY.—Architectural Association. Lecture, "New Works of Art," by Mr. J. G. Goodall, Geological Survey, 2 p.m.
- TUESDAY.—Royal Institute of British Architects. Annual General Meeting, 8 p.m.
- SOCIETY OF ARTS. "Alloys," Lecture, No. 1, by J. K. Rose, D.Sc., 8 p.m.
- LIVERPOOL Architectural Society. Lecture, Address by the President, Prof. F. M. Simpson.
- TUESDAY.—Society of Arts. "The Good Question: its Relation to the Empire," by Lieut. Carleton W. Bellairs, R.N., 4.30 p.m.
- WEDNESDAY.—Society of Arts. "School Work in Relation to Business," by Sir Joshua Fitch, LL.D., 8 p.m.
- FRIDAY.—Architectural Association. Special Meeting to consider Amendments to By-Laws, 7 p.m. Paper on "The Protection of Buildings from Lightning," by Alfred Hands, 7.30 p.m.

THE ARCHITECTURAL ASSOCIATION.

MAY 10.—ANNUAL GENERAL MEETING. The Association will meet at the Royal Albert Hall, London, on Monday, May 10, at 8 p.m. for the purpose of electing officers and considering the report of the Council for the year 1900. A special general meeting will be held on Wednesday, May 12, at 8 p.m., for the purpose of considering the report of the Council for the year 1900, and of electing officers for the year 1901. The Association will also hold a special general meeting on Friday, May 14, at 8 p.m., for the purpose of considering the report of the Council for the year 1900, and of electing officers for the year 1901. The Association will also hold a special general meeting on Sunday, May 16, at 8 p.m., for the purpose of considering the report of the Council for the year 1900, and of electing officers for the year 1901.

G. B. CARVILLE, Hon. Sec.

Trade News.

WAGES MOVEMENTS.

BRADFORD.—The position in the Bradford building trade is serious, and a strike appears imminent. The men have refused to accept the proposed reduction, or to have the dispute arbitrated upon, and the masters issued notices on Tuesday to the effect that on and after May 1 the rate of wages for masons will be 9d. per hour (a reduction of 1d.) and for joiners 8½d. (also a reduction of 1d.). In addition to this the masters state that in future society and non-society men must work together, and that six months' notice of any alteration in rules must be given on either side, expiring on April 30 or October 30. The position is further complicated by the labourers demanding an advance of 1d. per hour; but the masters state that in view of the necessity for a reduction in the wages of the masons and the joiners they cannot entertain any such proposition.

DARLINGTON.—Negotiations have been proceeding between the employers and the bricklayers who are on strike at Darlington. The men struck for an advance of 1d. per hour, which would make their wages 10d. The employers offered to give a two years' guarantee that the men should not be asked to accept less than 9d. per hour, and after a long discussion this has been accepted by the men on the proviso that all old workers applying for employment shall be reinstated.

HARTLEPOOL.—A complete stoppage of the building trade in Hartlepool took place on Saturday, owing to a strike of bricklayers and plasterers' labourers, who have met a proposal of the masters for a decrease of 1d. per hour by making a demand for 4½d. per hour advance. Several hundred men are affected.

LEICESTER.—The stonemasons have given notice to their employers to terminate existing contracts with the view of obtaining an advance of from 9d. to 10d. per hour, a reduction of half an hour a day, and other concessions. The strike of bricklayers and bricklayers' labourers at the Wholesale Market still continues.

STOCKTON-ON-TEES.—In response to the demand of the Stockton painters for an advance of 1d. per hour, the masters have agreed to grant an increase of ½d. per hour. This has been accepted by the men, and they have withdrawn the notices which were to have expired on Wednesday last, May 1.

WESTON-SUPER-MARE.—The master builders having refused to comply with the demands made some months ago by the carpenters and joiners for an increase of wages by ½d. per hour, the men have gone out on strike.

On Friday, the members of the St. Helen's Town Council were invited to the electric power station, Cropper's Hill, St. Helen's, to make an inspection of the recent extension at the works, the principal improvement being the addition of a 600H.P. steam generator, which is the largest yet put down. It has been constructed by Messrs. Williams and Robinson.

♦♦♦
IRON. &c.

Flooring Boards, per square of lin. :—			
U.S. ditto	0	1	0
Other qualities	0	6	6
M			
U.S. ditto	£37	10	0
Other qualities	230	0	0
M			

	per ton	per cwt	per 100 lbs	per 50 lbs	per 25 lbs
Rapeseed, English pale	28 10 0	24 0 0	12 0 0	6 0 0	3 0 0
Do., brown	26 15 0	22 10 0	11 0 0	5 5 0	2 10 0
Cotton-seed, refined	21 0 0	20 0 0	10 0 0	5 0 0	2 5 0
Olive, Spanish	38 0 0	40 0 0	20 0 0	10 0 0	5 0 0
Do., Italian	26 10 0	24 0 0	12 0 0	6 0 0	3 0 0
Do., Ceylon	25 10 0	25 15 0	12 5 0	6 2 6	3 1 3
Palm, Lagos	25 5 0	25 10 0	12 7 6	6 3 8	3 1 9
Do., Java	17 5 0	14 0 0	7 0 0	3 5 0	1 7 6
Petroleum, refined	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
Do., kerosene	1 0 0	1 6 0	8 0 0	4 0 0	2 0 0
Turpentine, American .. per ton	37 0 0	37 5 0	18 7 6	9 3 8	4 6 9

The Bishop of Liverpool Dr. Chavasse has con-
secrated a new church which has been added to
the church of St. Mark, Newtown, Wigan, at a
cost of £1000.

A meeting of the Housing Committee of the Birmingham Corporation was held on Monday to further consider the plans for the erection of a block of tenements on the flat system in Potter-street and Staniforth-street. Eventually the committee unanimously decided upon a scheme, and instructed the city surveyor, in conference with the manager of the Estates Committee, to prepare a full report and complete plans, together with an estimate of the expenditure. The scheme is for a block of buildings four stories high, and containing seventy-six tenements each of two, three, or four rooms.

The Board of Trade inspection of the Halifax tramway extensions from Tuel-lane Top, Sowerby Bridge, to Luddendenfoot, from Stump Cross to Northowram, and from Stocks' Gates, near Ambler, to, near Queensbury, took place on Thursday in last week. Major Druiitt was the inspector attending, and he passed all three lines, which have since been opened for traffic.

The Gateshead School Board are about to commence Kelvin-grove School, from the design of Mr. J. Landell Nicholson, architect, 55, Northumberland-street, Newcastle-on-Tyne, which was placed first in competition last year. It has been delayed through the bricklayers' strike, which was settled recently. This, the first of two blocks, gives accommodation for 400 infants on ground floor, and 360 junior boys and girls on first floor at a cost of about £7,000.

A House of Lords Committee have approved the preamble of the Mersey Docks and Harbour Bill, the object of which is to empower the Docks and Harbour Board to inclose a portion of the foreshore of the Mersey at Tranmere Pool.

An inquiry was held at the town hall, West Bromwich, on Friday, by Mr. F. H. Tulloch, inspector under the Local Government Board, into the town council's application for sanction to borrow £15,000 for the carrying out of extensions and improvements at the borough sewerage works. The town clerk explained that it was proposed to spend the money in extending the bacteria process at the sewage farm.

The memorial-stone of a new board school was laid on Saturday in Wheler-street, Higher Openshaw. This is the 35th school erected by the Manchester School Board, and it will provide accommodation for 1,400 children. The new building, which has been designed by Mr. Frank Edwards, architect, Manchester, will be two stories in height. Manual instruction for boys will be provided in the basement, and there will be a special room for drawing instruction. A cookery-room and laundry are to be built apart from the main building. The contractors are Messrs. Young, Tinker, and Young, of Cheetham.

The parish church of Macclesfield, which has been restored at a cost of over £21,000, was reopened on Friday by the Bishop of Chester.

At the town-hall, Waterloo, Liverpool, on Friday, a Local Government Board inquiry was held by Mr. H. Percy Boulnois, M.I.C.E., with regard to an application made by the Waterloo District Council for power to borrow £19,653 for the purposes of a public park and a recreation ground.

The new cottage hospital erected at Carnarvon was opened on Friday. The cost of the building, exclusive of the land, which was presented by the Lord Lieutenant, Mr. J. E. Greaves, was £3,750.

Mr. H. Percy Boulnois, an inspector for the Local Government Board, attended at the Public Offices, Grassendale, on Friday, to hold an inquiry into an application by the Garston Urban District Council to borrow £2,800 for public offices.

The sum of £350 was left for the purpose of providing the parish church at Cotton, near Stowmarket, with a new organ, in place of an American organ. This has resulted in an organ being erected at the east end of the south aisle. The organ has been built by the firm of Messrs. Abbott and Smith, of Leeds. It has two manuals, and the total number of pipes is 630.

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on p. VII.

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LIST OF COMPETITIONS OPEN.

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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

VOL. LXXX.—No. 248.

THURSDAY, MAY 10, 1901.

ARCHITECTURE AT THE ROYAL ACADEMY.—II.

LAST week we gave a general idea of the more prominent contributions made to the collection of one hundred and sixty-five drawings which have been presented to the Contemporary Architecture at the Royal Academy of Arts. There are eight hundred and twenty-three works in the entire exhibition, chiefly, of course, oil paintings. We were obliged, for reasons as to its, to omit any reference to some of the drawings exhibited in the Architectural Rooms, and these omissions we will now briefly endeavour to notify, following the order of the catalogue for convenience sake. In this way we come upon the Borough of Loughborough Spa Free Library and School of Art (1530), by Mr. J. Mitchell Bottomly, and Mr. T. W. Cutler's Italian Hospital, San Carlo, in Genoa-square, Lombardy (1532), both of which are in the prevailing style, with some degree of originality. The little house at Matlock Bath, designed by Mr. Bates, however, is, as might be expected, a piquant example of the picturesque blending of stone, tile-hanging, and half-timber, with a good and convenient plan (1533). St. Catherine's Church at Middlesbrough (1540), from the pencil of Mr. Temple Moore, recalls the work of his master, Gilbert Scott, jun., at St. Agnes, Kennington, though really the building is, of course, different. There are two towers flanking the east of the nave, one being carried up into a conical-roofed spirelet. The morning chapel projects boldly eastwards, the entire composition being adapted so as to cover the whole of the street-bound site; but no plan accompanies the washed view to show how the interior is managed. This broadly-treated church is in striking contrast to Mr. Caroe's large and important florid church about to be built near Plymouth (1543), mentioned in our previous notice; but the same architect exhibits a plainer brick church at High Wycombe of striking singularities. The east end has no window; but on the exterior, in lieu of the usual feature, an enriched calvary cross furnishes the mural decoration—a meaningless arrangement which we have seen carried out before. The morning chapel is on the south side, and its east window has a straight pointed head filled in with tracery—a novelty without niceness. The tower on the north has a saddle-backed roof with gables at right angles with the nave. The new medical laboratories at Netley, by Mr. Edward S. Prior (1542), do not interest us sufficiently to excite anything like enthusiasm—a feeling certainly inspired by the author's book on Gothic architecture—and we can but wonder at the difference between theory and practice thus exemplified. The School Board Offices, Newcastle, by Mr. W. H. Knowles (1548) is a straightforward piece of Classic work, and we suppose the design exhibited by Mr. Gerald C. Horsley for the Girls' School, St. Paul's, Hammersmith (1550), is straightforward enough, and practically planned; but, architecturally, if we may judge from this drawing, the work is most bald and commonplace, without grace or refinement—a striking contrast to the boys' school in every way, without compensating for the confessedly hard lines of the larger building;—an effort which a representative of the newer school like Mr. Horsley certainly might have attempted. The Swansea Harbour Trust Offices Competition is represented by 1552,

1553, and 1554, and we notice that, locally, it somewhat resembles-looking, designs at Nottingham, brought in colour, by Mr. Gilbert S. Doughty, of that town (1551). Two smaller churches shown, St. Peter's, Cricklewood, and St. John Baptist, St. Wilham, Lincolnshire, are respectively by Mr. F. H. Watson and Messrs. Brewill and Bailly. Mr. Francis A. Whitwell sends two views of a rough-cast house at Penn, Bucks (1564-5), picturesque and without ostentation. Salisbury House, Salisbury (1569), by Messrs. Paves and Emmanuel, is a big building covering a large piece of the heart of the City heavily, and without enriching the artistic possibilities of commercial enterprise. Professor F. M. Simpson has pencilled the entrance-hall of that well-known building, doing what was possible to give interest to such a building (1571), a not very easy task. Mr. Ernest Newton is unfortunate in the drawings of his houses (1573, 1577, and 1578) this year; but the Chislehurst one appears to be the best, and most like his style. Rough-cast and green slates are the leading characteristics of his poorly-treated "Steep Hill, Jersey," with its circular-fronted porch. Mr. H. Percy Adams shows a quaint little lodge at Woburn, and hard by hangs the new tower to St. Paul's, Heaton Moor, finished off with an octagonal lantern, designed by Mr. F. P. Oakley, of Manchester. Mr. Chas. H. Worley's pencil study of small premises in Bond-street (1583) does not come up to Academy standards, and we cannot express surprise that Mr. Halsey Ricardo should be guilty of such curious and strangely-mannered piece of work as the "Joint Terminal Station for the East Indian and Bengal and Nagpur Railways at Howrah, Calcutta" (1588). The structure is in brick, and if this is high-art production, we cannot admire it. There appears to be neither breadth nor good proportion about the building. The style is not in the least classifiable, and is hardly suggestive of its location or purpose. The series of etchings displayed by Mr. C. J. Harold Cooper of the interior of a house near Piccadilly make uncommon illustrations; moreover, they show some very tasteful and good modern internal decorative woodwork (1591, 6, and 7). The exterior is not represented. Mr. John Belcher, A.R.A., sends an interior of the Château Mauricien, Wimereux, of which he published a view last year. The *salon* now seen (1599) is conceived in a Continental Classic manner with painted ceilings, the walls being spaced with Ionic columns and pilasters, handsome and suitable, but neither very original nor suggestive. Mr. W. Campbell Jones does nice little work, and his "White Hart, Sonning" (1600) is neatly drawn in pen and ink, quite in keeping with the country side. Messrs. Bradshaw and Gass have shown no little cleverness in scheming their Thomasson Reading Room, Bolton, illustrated in our pages on April 19, and we must mention Mr. Hatchard Smith's Station Buildings, Huddersfield—a sensible work, also illustrated in our pages some little time ago. The selected design for Blackburn Police Offices and Court House (1602), by Messrs. Briggs and Wolstenholme, we shall shortly publish from the drawing here exhibited; near which we observe the design of Messrs. Woodhouse and Willoughby (1609) for the same series of buildings. Mr. Edward Mountford's building in Cowcross-street, E.C., has an arcaded base, a row of pedimented windows on the first floor, a deep frieze between the attic windows surmounted by an unbroken cornice, with dormers behind the parapet, and striped chimneys in brick and stone (1610). It makes an excellent front; but having buckled in the mounting, the drawing gives an unfortunate appearance to its horizontal lines, which are thereby much distorted. The British School, Trowbridge, Wilts, by Messrs. Silcock and Reay, hangs too high to be well seen;

but the design is boldly handled and treated tastefully in a well-detailed manner with brick, slate, and stone. Mr. James S. Gibson's clever and dignified design for Walsall Town Hall (illustrated in the BUILDING NEWS, Oct. 19, 1900, is one of the best buildings shown this year (1639), quiet and reserved in its Classical dignity, expressing its purpose, and marked by good proportions. The drawing is unimportant-looking 'midst so many more pretentious perspectives; but to the observant critic the scheme presents much that is worthy of admiration—mainly, possibly, on account of the reserve displayed by the design. It may be that in execution the work may hardly realise the ideal suggested by the thick lines employed for its delineation—a striking contrast to the thin drawings in vogue when Sir Charles Barry did his best Classic work. The Terrace and Summer-houses at Dalham Hall, by Messrs. C. E. Mallows and Grocock, represented by an adept draughtsman, are brightly handled in pen and ink, showing a semicircular columniated alcove below the terrace, which is erected of brick and stone, much being made of the steps on either side (1625). Messrs. Harrison and Ward show good houses at Cuddesdon and Llimpsfield, and Mr. Arnold Mitchell exhibits a large drawing of some additions to the odd, old mansion called Tissington Hall, Derbyshire, done in stone in character with the original building. Bowden Green House, Pangbourne, is not a very happy effort by the same architect (1631). Mr. Edward P. Warren, one of the lights of the advanced school of architects, scarcely advances our art by his over-windowed Bedale's School, Petersfield, drawn here in pencil (1632); and we are lost in wonder at the hanging of such a set of heavy, brown-washed elevations as those displayed by Mr. R. M. D. Lucas, illustrating the Old Bar Gate at Southampton. Mr. W. H. Atkins Berry seems to have made the most of the corner feature of some offices in Moorgate-street, in banded brick, with a somewhat customary turret (1633); and hanging close at hand is an admirably-drawn figure of "St. Nicholas," a good design for a stained-glass window, by Mr. James C. Powell. Mr. Clyde Young exhibits a big, handsome drawing, by Mr. English, of the Glasgow Municipal Buildings, designed and built many years ago now by his late father, Mr. William Young (1638). The view shows the John-street front to much advantage, and, by curtailing its terminations, enhances the interest of the composition. Mr. E. M. Bruce Vaughan exhibits a Memorial Church at Oystermouth, to be erected in connection with the late Frances Ridley Havergal (1643). The building will add to the repute of its architect for churches in the West of England and Wales. Mr. J. Armstrong Stenhouse shows a Gothic-headed Chimney-piece in "The Hall" at Egham (1648), which will look well, no doubt; and the Gardener's "Booth" at "The Bury," King's Walden, Herts, by Messrs. Beeston and Burnmaster, is a satisfactory little piece of domestic building realised in tile-hanging with a timbered gable. The Technical Institute, Warrington, by Messrs. Owen (1655), is conceived in good taste, and though of a different type, the same may be said of Mr. Reginald Kirkley's designs for South Shields Municipal Buildings, which gain much by a good pen-and-ink drawing (1665). Mr. Reginald Morpew's block of offices in Jermyn-street, W., erecting in stone ashlar (1659), we have already illustrated; and we notice an ambitious scheme by Mr. E. B. Lamb (1664) for a National Memorial to British Heroes, a well-handled group of spires and Gothic features little likely ever to be built, but none the less able, and in some ways ideal. Mr. Ernest Emerson, the son of the President of the R.I.B.A., sends his maiden contribution of the Academy, the subject being some stables for a house at

architects are doing excellent work. At any rate, many exhibit an endeavour to strike out on fresh lines, though the tendency seems to be towards baldness and crude simplicity, which leads to a want of interest in some otherwise clever productions.

PICTURES AT THE ROYAL ACADEMY.
—II.

ALTHOUGH a few cleverly-painted subject-pictures are to be seen on the walls of Burlington House, there are a great many below the standard of merit, both in composition and handling, that we expect to find in the Academy. Having noticed a few of the more important pictures, we may now glance at others, taking the order of the galleries. In Gallery I., Frank D. Millet's picture, "The Proposal" (9), a Puritan in black garb, with steeple-shaped hat, sitting near a young maiden on a bench before a table with frugal fare, is distinguished by all the simplicity and restraint of colour of this master. Its very simplicity and the demure expression of the young man's face are its chief attraction. This painter's larger picture, "An Accusation of Witchcraft," in Gallery XI. is a scene laid in a plain white-washed courthouse—possibly Salem, Mass.—which this able American painter can so adequately depict. The young girl, whose eyes express her mental agony, stands between officials in uniform, while a Puritan minister in black clerical attire is laying the accusation before the judges, seated at a table with all the dignity of their position. Round the open doorway are seen many interested spectators. But we pass to a fine landscape by Alfred East (16), "In the Cotswolds," strong in handling, with its background of sun-tinged hills. Frank Dicksee, in "Yseult" (52), gives us an incident in the story of "Tristram and Yseult" we noticed last week—a harmony of rich crimson and gold, in which the beautiful daughter of the Queen of Ireland, who married King Marke of Cornwall, is seen seated at the balcony of the palace facing the sunset sea, her arms resting on the stone sill and her hands clasped. She wears a sad expression; a string of pearls encircles her auburn hair, and she sits in a sumptuous chair of beaten gold. We chiefly admire the work as a piece of gorgeous colour and poetic fancy.

Very different in motive and in its pathos is Middleton Jameson's "The Vaticum": a group of poor people on the pavement crowd round the door of a humble dwelling at the corner of a street in the shades of evening. They are chiefly kneeling. We see in the lighted doorway a priest administering the last Sacrament before a small altar, with its flickering lights and crucifix. Outside is a young acolyte, in surplice, his scarlet belt giving a note of colour to the dingy surroundings of a street. The colour and handling are powerful and impressive. On the other side is a large, well-painted interior, by William M. Palin (54), "The Light that Never Fails," in which an elderly gentleman sits listening to his young daughter, seated against the lighted window reading from a large Bible. The waning light and shaded figure of the girl, and the reflected light and half-shadows and the dainty tea-table are well painted. W. Q. Orchardson, in "Blossoms Fair" (40), paints in his delicately-subtle tones of amber a young lady in Empire gown putting a pot of white chrysanthemums into a large vase on a side table, in a richly-ornamented Cinque Cento room. J. W. Waterhouse's portrait of Mrs. Schreiber (48), in white satin, sitting in a red upholstered chair against a blue curtain background is admirable in the colour scheme; and we also notice for its strong colour and freshness John R. Reid's "Sons of the Sea" (45). Albert Goodwin, whose subjects are generally taken from the field of fiction, exhibits "Ali Babb

and the Forty Thieves" (53), a grove of giant palms, beyond which the blue sea appears, as the scene of the incident. The silvery tones of the thick forest give an air of romance to the theme. In "The Phantom Ship," in the Sixth Gallery, and "Sinbad the Sailor," in another gallery, we notice the same skill in throwing a spell of weirdness over the subject. Clever in its involved suggestion and subtle meaning is Byam Shaw's "Suffolk's Hand" (60), a subject taken from Shakespeare's "Henry VI." The gold and green mantle and deep blue dress and the able management of light are skillfully painted. A full-length and graceful figure of Mrs. D. Falcke, by F. Howard Michael (64), may also be mentioned. "Sons of the Sea," by John R. Reid, depicts a harbour: a jetty runs out into the sea, and sitting along its edge are a number of fisher-lads. The colour is fresh and strong. In Gallery II. there is little to detain us, if we except Ernest Croft's dexterously-handled "An Affair of Honour," a meeting preparatory to a duel. C. Napier Hemy's grand sea piece, "The Home Wind" (85), Arthur Hacker's fine conception, "The Cloud," J. MacWhirter's "A Flowery Path," a scene in Switzerland, a deftly-painted hill covered with wild flowers, descending which is a procession of white-dressed nuns. The chief portraits are the large group by John S. Sargent we noticed last week, and Hubert von Herkomer's graceful full-length picture of a young lady in white standing against a background of coupled columns (113), "Seeing, I Saw Not; Hearing Not, I Heard," Frank Dicksee's portrait of "The Duchess of Buckingham and Chandos" (122), seated, richly-attired in white-and-gold embroidered dress, wearing a diamond coronet, against a background of blossoms, is very effective in colour and as a study of costume and technique. R. W. Madox has a study of still life, "Roses," beautiful blossoms in a blue-and-white vase, with a bronze plaque and illuminated book, admirable in colour and technique.

Last year H. W. B. Davis painted a fine landscape, "After Sunset," with all the beauty of woodland and stream. This year he sends three pictures, "Evening" (127) and "The Nearest Way Home" (162), and "Early Summer" (646), all excellent in handling and colour.

We noticed last week a few of the more prominent pictures in Gallery III. On the great portrait by M. Benjamin Constant of the late Queen opinions will differ. The painter has conceived and painted a symbolic ideal, not a mere portrait, and we think the prominence given by the King to the French painter's work will be appreciated by the French nation. They cannot undervalue the compliment. There has been a protest raised by some against the quantity of blue and crape drapery which surrounds the picture, which deprives a number of pictures of a coveted position. Of other portraits worth noticing may be mentioned the late Duke of Westminster, K.G., painted for the Public Library of St. George's, Hanover-square, by subscription, by William Carter. It shows the late Duke standing, and is an excellent portrait. Hon. John Collier's portrait of "The Duke of Cornwall and York" (151) will also be noticed at the opposite corner; but the most attractive group is John S. Sargent's "Daughters of A. Wertheimer, Esq." (178), which hangs near Mr. Leader's great landscape, "A Gleam before the Storm." The two young ladies, full length, standing, one of whom has her arm round the waist of her sister, are in low evening dresses, one of white satin, the other of deep maroon velvet, her black hair adorned by scarlet flowers, repeating the darker tone of dress. The taller of the two ladies rests her hand on a large porcelain vase. The wall beyond is hung with paintings. The painter succeeds in giving two attractive and

charming personalities instinct with life; the features are painted with brilliancy, and the group must be regarded as one of the painter's most successful works of portraiture.

His portrait of "Mrs. Charles Russell" (219), a three-quarter life-size, one arm resting on a pedestal of an elegant electro-plated lamp, is decidedly unconventional in its treatment, and is strong in individuality. The portrait of "Professor G. Arctison, R.A." (211), noticed last week, good as it is, is overpowered by the amount of red in the linings of the armchair.

Another well-known architect has his portrait in the Academy, which we may mention here. It is "T. G. Jackson, R.A.," by Hugh G. Riviere, in Gallery VIII. 551, shown seated before a drawing of a gable, with T-square and pencil in hand, excellent as a likeness; there is individuality also. G. F. Watts has an idealised study "In the Highlands," a young girl seated on a rock amidst hills, on her lap rest a mass of loose wild flowers. The colour is the strongest quality. H. W. B. Davis has also one of his best works, "The Nearest Way Home" (162), cows crossing a brook, a work of much sympathy and strength; the colour is sombre and restrained. Geo. Clausen in "A Gleamer" (184) has a strongly painted and sincere work. A large canvas by Frederick Goodall, "The Snake Charmer, Cairo" (185) will attract for its subject and the graphic details of this master of Oriental scenes.

J. MacWhirter has a majestically painted landscape, "A Fallen Giant" (203), an uprooted and fallen tree; and we may notice in passing Val. C. Prinsep's "Autumn" (190), "Hollies Weir and Flowers of Spring" by R. Viner Cole in the woodland and "By the River," by A. Winter Shaw (192). Briton Riviere has a clever dog study "To the Hills," a shepherd or grumpeper turning the lock of his cottage door, in a hilly country; his three collies are ready to make off, delighted with the prospect of a run. The sense of movement and vivacity in the dogs is very ably rendered. The work is less ambitious and remarkable than his last year's work, "St. George and the Dragon," which will be remembered in the Third Gallery, No. 198, by Luke Fildes, "Gegetta," is a type of dark expressive face we have seen in other of his pictures. The girl is evidently a Venetian lass, her black, dishevelled hair, and the blue figured bodice and green shawl making a charming study of grace and colour.

"After the Boats Came In," by Robert W. Allan (256) is one of the best coast scenes in the galleries. The painter depicts a Northern harbour, around the quays of which a fleet of Scotch fishing-boats are moored, while on the beach a number of fisherwomen round a sort of tank are cleaning the fish for curing purposes; numerous barrels for the fish are a little beyond, and in the distance waves break over the rocks. The handling and colour are vigorous and strong. The large picture by William L. Wyllie (272), "The Passing of a Great Queen," is a fine piece of realistic painting. The picture represents the scene on the Solent, so recently described, the steamer conveying the Queen's body through the lines of great ironclads. The effect of sunlight through the veil of mist and smoke on the water and atmosphere, is very truthfully given by the amber tones; the grouping of the vessels and the technical skill displayed in their perspective and details make this one of the most successful of the painter's work. As a sequel we have John Charlton's equally clever canvas in the same gallery, "2nd February, 1901" (253), we just noticed last week. Mr. Charlton has shown the Royal funeral procession as it turns the corner of St. James's Palace, in which we see the commanding figure of the Duke of Norfolk, the gun-carriage, and the Royal mourners. The

composition is clever in its grouping of the chief mourners, and the subdued colouring of the street surroundings contrast with the scarlet and brilliant uniforms of those in the procession.

J. J. Shannon's pleasing subject, "The Flower Girl," carrying her infant through a path of trees, with the sunlight flickering through the foliage on the face and figured dress of the young mother, is worth notice. J. Seymour Lucas's historical episode in the life of Cardinal Wolsey, "The Clouds that Round the Setting Sun" (300), representing the great Cardinal with bowed head, in his scarlet robes, walking through a garden into a sunlit lawn, is a powerful contrast of colour, and the figures of his attendants, who are a little behind, looking forwards, are dramatically introduced. A large red brick building is seen beyond the close-cut hedge in the background. Then we have H. H. La Thangue's very clever piece of realistic painting, "Gathering Plums" (308). On the sloping banks of a brook, between two orchards, a girl is stooping picking up plums that have fallen from the trees; three baskets full of the purple fruit are in the foreground, and beyond is a boy helping in the work. Gleams of warm sunlight through the trees fleck the grass of sloping banks. Peter Graham has a large sea-piece, "Waiting for the Tide" (313). The scene represents a jetty or quay with group of waiting men, and in the foreground is seen a rock with seagulls. The atmosphere and misty distance are painted with his accustomed freshness. The incident told by Margaret I. Dicksee (314), where the young Thomas Lawrence is shown in a large inn-parlour at Devizes, taking the portrait of a fashionably-dressed young lady who is making a stay at the inn before proceeding to Bath is interesting.

This completes our review of the first four galleries; we shall deal with the other galleries next week.

HOW TO ESTIMATE; OR, THE ANALYSIS OF BUILDERS' PRICES. VI.

By JOHN T. RICE, F.S.L., Surveyor, War Dept.
ANALYSIS OF PRICES' MATERIALS.

BURNT BALLAST. The term "ballast" is derived from the use of similar material placed in the hold of a ship to keep it steady when there is no cargo. It is much employed in the shape of broken stone, gravel, &c., for making concrete and forming roads, as well as on railways. When ready-made ballast is not procurable, burnt-clay ballast is used, which is made from any clay suitable for brickmaking. That for concrete is produced by making a fire of "slack," or small coal, embers, breeze, ashes, &c., and covering this in with lumps of clay or brick earth; more fuel is scattered over this, then more clay, and so on in alternate layers. It may be cooking, so to speak, for weeks. In this way as much ballast can be made as will be wanted. It is most important that the clay should be thoroughly burnt; otherwise it will return to its natural condition. Burnt ballast by itself, however, is not to be recommended as an aggregate for concrete where strength and durability are required, as it is too weak in tension and compression. If used with a harder aggregate, such as broken bricks, stone, or gravel, it is all right. The clinker refuse from the "Newington" dust destructor at Mepham is much more suitable, and its greater cost would be more than repaid with the better results obtained.

It takes about 2 wt. of fuel to burn 1 cubic yard of clay, and calculating small coal at 16s. per ton, the cost of production would be:

1 cubic yard of clay in the field	s. d.
Excavating, dirt and spreading	1 6
Labour in burning	0 11
2wt. coal at 16s. per ton	0 6
Total cost per yard cube	1 7

A chaldron of breeze at 9s. burns from 9 to 12 cubic yards of clay. Proper clay can sometimes be obtained from the building site, in which case its price would be eliminated.

Clay and Ballast. This is a natural mixture of gravel or shingle with sand, in the proportion of

two of the former to one of sand, that from above the bridges is the densest. Therefore no sand need be added when this is set for concrete. There is 1 bushel in the City cubic, is 44, per yard cube.

Portland Cement. This is an artificial combination of chalk, and a comparatively small percentage of clay, and is so called from a supposed resemblance in its colour to Portland stone. The heaviest qualities set the slowest, but are the best, as they ultimately attain the greatest amount of strength. The usual weight specified is 11 lb. or 12wt. per bushel, and each sack or bag contains 2 bushels, weighing 22wt., which give 10 sacks to the ton. By London custom the bags contain 2 cents, or trade bushels, of 100lb. each, giving 200lb. of cement per sack, which costs 3s. 8d. Bags should not be included in the weight. Those of No. 1 canvas cost 18s. per dozen, and those of jute 7s. per dozen.

A manufacturer makes a trade allowance to a builder of 11 bags to the ton, although only 10 bags actually weigh a ton. Now 1 bag = 2wt. 2 bushels, or 1 bushel = 11 lb. cube. Therefore 1 bag = 2 1/2 ft. cube, and 11 bags = 27 1/2 ft. cube = 27.5 ft. cube. Thus 1 ton of cement = 1 yard cube.

The cost is about 35s. per ton, including use of bags, delivered in London; and an average price for lesser quantities for the purposes of calculation would be 4s. per bag, or 1s. 10d., P.C., per bushel. If delivered by van within a radius of three miles, or to any railway station in London, cement costs 1d. per bushel extra. A convenient rate given for country districts is 2s. 6d. per bushel.

Cement is exported in fir casks, lined with stout brown paper to prevent leakage, and bound with iron and wooden hoops, each generally containing 4 cents, or 100lb. net. Prices, net, per cask, including 1s. 6d. for cost of cask itself. Six casks = 1 ton.

Lime. The "stone" or grey-chalk lime commonly used in London is obtained from the lower chalk beds in the South of England at Dorking, Lewes, Petersfield, Haling, Merstham, &c., and is feebly hydraulic. It weighs about 70lb. per bushel. A cubic yard costs 11s., and with 8 sacks (of 2 bushels each), or 16 bushels, to the yard, the charge would be 8 1/2d. per bushel. The ordinary ground Dorking or grey lime is now seldom kept in stock by London merchants, as the ground has much stronger, and cheaper also than formerly, and is brought up from the country in large quantities.

When lime is purchased in sacks, it may be bought in the form of ground lime instead of lump, at a small increased price, with, of course, a further extra charge for the use of the sacks.

Lias lime, called "blue lias" from the colour of the raw stone, comes mainly from the Midland and South-Western counties, chiefly from such places as Rugby, in Warwickshire; Lyme Regis, in Dorset; and Aberthaw, near Cardiff. It is much more hydraulic than the stone lime. Ground lias lime costs 25s. per ton in the Metropolitan, and as two yards equal one ton, the price per yard cube is 12s. 6d. As there is an average of 30 bushels to the ton, the price per bushel works out to 10d., including use of bags. There are three bushels of ground blue lias lime to the bag, or 10 bags make one ton. If delivered by van within a radius of three miles, or to any railway station in London, lime costs 1s. per yard cube extra.

Brick Rubbish.—This is termed "rubbish" because the broken bricks, &c., of which it is composed are generally obtained from old buildings pulled down; if not, the most inferior bricks brought on to the site must be utilised. Such hard dry material is not only used for concrete aggregate, but as a filling beneath concrete pavements. A labourer can break to 2in. or 3in. cube 4 cubic yards per day, or 1 yard in 2 1/2 hours, and putting down 2s. for bricks, we have—

Bricks for 1 cubic yard of rubbish, say	s. d.
Breaking ditto, 2 hour labour at 6d	2 0
	1 3
	3 3
Add profit	0 3
Total cost per yard cube	3 6

Broken Stone.—The smaller the stone is broken the heavier a cubic yard of it will weigh, as the percentage of vacant space between each stone will be less. Stone, broken to 2in. gauge for ordinary metalling or concrete, would only be a little more than half the weight of the solid rock.

A common price in large excavations for each additional barrow run is 1d., or half the above.

In London rubbish is carted away and shilled at 1s. per load, reduced to 2s. 6d. in the suburbs. Every additional mile is reckoned at 1s. Learning, in his "Notes of Bidding Prices," states: "Cartage in a city like London will cost more than in its suburbs or the country, because of the congested traffic; it should also be remembered that in a hilly neighbourhood the cartage of fewer loads in a day, and consequent greater cost, must be allowed for. A rough engineering axiom is 'one shilling a load a mile.' Assuming that a horse, cart, and man can draw a ten loads each a mile at 1s. per load, we thus have a result of 10s. per day. A constant variation of a load on a return journey from an original delivery is one-half the price of the latter. . . . An approximation to the usual charge of stone merchants for cartage is 5s. per load of 1½ tons within four miles. Cartage depends on the Surrey Commercial Docks or St. Paul's and equal distances, 8s. per standard ditto and 11s. 6d. for the same distance to the City.

RESULTS OF SOME TESTS WITH FIRE
RESISTING MATERIALS.

I WILL, however, submit to the committee that the committee should first obtain some data as to the fire-resisting qualities of the ordinary kind of partitions used in building—viz., the lath and plaster partition with wood laths, the same with wire lathing, and the brick-nogged partition with

Approved by M. I. L. McDonald, Hon. Sec. S.A.C.
for the Society of Architects on April 25, 1964.

solid 2in. door of the same material. These tests

tests. You will find upon the screen at the side

graphic diagram showing the condition of the various doors at intervals, in most cases of five minutes, taken during the tests. The first of the

may be seen in the view, into the recessed wall, built about 14in. back across the hut, one side of the door being in the chamber, and the other side exposed to the external air. This arrangement was identical for all the tests, so that separate

when the doors were practically destroyed. Fol-

so that having seen this one it will be unnecessary

pitch-pine one. The view now upon the screen shows the

and the next view after 55 minutes, when the doors were mostly consumed. We now come to the

Another teak door of similar construction, but

The next two doors are of Austrian oak and American

started, but in the walnut door flame appeared at intervals after 15 minutes. The view shows the

condition of the door after 30 minutes, and the next view after 50 minutes, when, as you see, the

the oak door had the worst of it. The last

mahogany and poplar. The fire came over the top of the poplar door in three minutes and over

the top of the mahogany one in ten minutes. The condition of the doors after 30 minutes was thus:

The poplar door, as will be seen, has all the upper part consumed. It had all disappeared in

It will be observed that these two doors did not stand so well as the deal and pitch-pine ones,

although in justice to the poplar door it had somewhat warped away from the frame at the top, this greatly facilitated the flame coming over and its

consequent rapid consumption. The committee's experience with this series of doors led them to experiment with doors made of material in three

thicknesses, and two doors were made—one of deal and the other of pine. The material was in

vertical and the inner one horizontal. The boards were in about 6in. widths, and securely

nailed together with 3in. clasp nails and clinched on the outside; the total thickness was 2½in. Each door was hung with one pair of strap hinges

close to the rebates as possible. These doors stood a longer test than the former series, as will be seen by their condition after 55 minutes. Flame

Flame was not seen through the pine door till 63 minutes, although in the deal door flame came through in 39 minutes. The destruction of the

doors was very rapid after the fire came through, and at 65 minutes the test was concluded. The iron

was the ruin of the doors, as on the nails and bolts becoming red hot, they charred the timber

around them and allowed the fire to come through. This led the committee to test three doors of similar construction to the last—i.e., in three thicknesses, but the thicknesses were

secured together by 3in. double wedge-shaped pins, driven in from both sides, instead of clasp nails. These doors had frames, and the frames

were splay rebated. The three doors were respectively of deal, teak, and oak. The test with these doors gave the best results of any of the

previously tested fire-resisting doors. The deal door of this construction was tested against a

four-pannelled teak door, with the result that at the end of 60 minutes the teak door was almost

consumed, but the deal door was practically intact as a fire-stop, and at 65 minutes presented this appearance while the teak door was all gone. The

oak and teak door of the same construction as the deal door presented this appearance at 60 minutes, and at 75 minutes were still in position, the

teak one being the better of the two. This ends the series of tests with fire-resisting doors, and

now we have a comparative test with an iron door meeting the requirements of the Building Act under Section 77, and a door constructed

of wood, and incased with tinned steel sheets, lock-jointed and screw-nailed; the construction

of the doors can be seen by the view now upon the screen. The test was to be one hour, and the summary of effects is as follows:—The wood door

covered with thin steel plates remained in position, but was much buckled and bulged, and the

upper part gradually inclined inwards to a considerable extent, permitting the passage of flame. The first spurt of flame over the top of

door was seen after five minutes. The iron-framed and panelled door remained in position, but became red hot, buckled and warped

considerably together with its rebated frame. The upper corner on the lock side gradually inclined

inwards to a considerable extent, permitting the passage of flame. The first spurt of flame between

door and frame was seen after twenty minutes. Notwithstanding that the iron door buckled, I

am of opinion it is the best fireproof door at present in use; but to be effective it requires three

hinges and three bolts, and the tendency to buckle is thus hindered. I recently, at a big fire, had the opportunity of observing the behaviour

of a pair of doors fastened with three bolts, and the result was the building on the fire side

was entirely destroyed, and the iron doors prevented it spreading to the adjoining section. Under the fourth head of my subject I now come

to protective coverings to windows or forms of glazing which in themselves resist at least for

withstood the action of the fire and water, and, except for stars and cracks, the remaining seven

squares were broken, and had pieces out. A further test on the same lines was undertaken

with the difference that the glazing was with small sheets of plate glass 4in. by 4in. by ⅜in.

thick, copper-electro glazed. This test was to be for 45 minutes, with a temperature of 1,300°.

Water was to be applied for two minutes on the outside at the expiration of 20 minutes, and for

two minutes on the inside at the expiration of the following 25 minutes. The glass in the casements

after the first application of water was not displaced. In 35 minutes the glass in the north

casement fell inwards, and in 35 minutes the same happened to the centre one; but that in the south casement remained in position

till the end of the test, although damaged at the top. Another test on the same lines in which the

casements were glazed with rolled plate wire ⅜in. thick. The testee desired 45 minutes' test, water

was to be applied after 30 minutes for one minute on the outside, and again at the expiration of the

test. The record result is that in 28 minutes the outside of the teak casements took fire. In 30

minutes the glass in the centre casement began to buckle and let the flames through. In 34, 37,

and 49 minutes respectively, the glass in the three casements began to bend both outwards

and inwards, and at the conclusion the glass in the three casements was unbroken, but fused and

doubled up into various shapes. This series of tests shows that at least for a time glass may

assist as a fire-stop. Skylights glazed with copper electro-glazed squares of prismatic glass and also

wired glass were also tested each for 30 minutes; the fire did not pass through the latter. It is

very desirable in light-courts and in narrow streets that ordinary windows should on an

emergency receive some protection, and a blind of some incombustible material readily drawn

across would in many instances prevent the rapid spread of fire from window to window

A test was submitted on these lines; the blinds being composed of asbestos cloth fixed on rollers

with the necessary gearing to keep them in position. The object of the test was to record the

protection against fire afforded respectively to a door and window. The test was to last 30

minutes. The fire was to be 3ft. from the face of the blinds, and the temperature was not to exceed 1,600° Fahr. The record of the effect was, that

the blinds after 30 minutes test remained in position, the fire not having come through the door or window. The photographs show the

condition of things on the outside at the conclusion of the test, and also the condition of the

face of the door and window on the fire side. This test is very satisfactory, and indicates that further

experiments in the direction of outside protection to windows against fire is desirable, as in a large

number of instances, especially as may be mentioned in the Jewin-street fire, the conflagration

was greatly assisted by the want of some such protection. Another means which might perhaps be

of use in theatres, or places where a permanent curtain is required, was submitted for test. It is

described as a "screen sail" curtain, and consisted of woollen material woven of treble-laid

coarse-spun worsted, five yarns to the inch; on one side the sail had a band of very close-woven

flannel, 8in. wide, sewn on horizontally. On the opposite side was stitched a band of hard-woven

West of England cloth fastened on slack, so that by cross-stitching vertically it formed a series of

pockets in which sponges were placed. These pockets were to catch water thrown on to the

by a fire-hose, or whatever water might trickle down from a perforated hose-pipe attached to the

upper edge of the sail. The curtain after 30 minutes' test remained in position.

The Great Western Railway Company are making preparations for widening and doubling the line from Dawlish from the station to the Kennaway Tunnel. The line from the station to Holcombe signal-box is at present single. The undertaking means an encroachment on the beach, which, however, will be compensated for by a sea-wall in front of the Marine Parade.

On Saturday, at Northwich, the light railway commissioners—Earl Jersey and Colonel Bache—opened an inquiry into the application of the Brunner-Mond Co., Messrs. Holden, Hesketh, and others, to authorise a light railway from Northwich to Warrington, and a westerly extension through Barton, Winnington, &c. Electrical trolley traction is proposed, the line being roughly calculated to cost £120,000.

THE VICTORIA MEMORIAL.

THE following resolution was passed by the Council of the Society of Architects at the last meeting:—

"That in the opinion of the Council of the Society of Architects founded 1881 all architects being British subjects should be granted the privilege of showing their loyalty by submitting designs for the proposed National Memorial to her late Majesty Queen Victoria, under conditions which should put those resident in distant parts of the Empire as nearly as possible upon an equal footing with those living in England, and that a copy of this resolution be at once sent to Viscount Escher with a request that it be laid before His Majesty the King."

CHIPS.

The Tiverton memorial of Queen Victoria will take the form of a clock tower to be erected on Lowman's Green.

At Oldswinford parish church on Saturday the dedication of a new organ took place. A chancel was added to the church a few years ago, in which an organ chamber was provided, and the new organ, which replaces the one in the west gallery, built some sixty years ago by Nicholson, of Worcester, has cost £1,100.

The old martello tower at Seapoint, Dublin Bay, is advertised for sale with the land attached thereto, by order of the Secretary of State for War. The tower was built during the Napoleonic invasion scare for the protection of the southern shores of Dublin Bay, and armed with a 40-pounder traversing gun, mounted on the bomb-proof roof.

A Local Government Board inquiry was held at the town-hall, Sittingbourne, last week, before Mr. E. A. Sandford Fawcett, A.M.I.C.E., respecting the application of the urban district council for sanction to borrow £40,000 for purposes of sewerage and sewage disposal and the erection of a dust destructor at the outfall works.

On Saturday the new chapel and schools which the Methodist New Connexion have erected at the corner of Daisy House-road and Cambridge-street, Derby, were formally opened. The premises, which, with the site, have cost about £4,000, are in substitution for the old Temple Chapel, London-road, in the same town.

The ceremony of dedicating the Hughes Recreation Ground, Deptford, took place on Saturday afternoon. The plot of land is about three-fifths of an acre in extent, and is irregular in shape. It has frontages in Trevithick-street and Butcher's-row, and forms part of an area which has been taken by the London County Council under an improvement scheme, the cost of which was £120,000. The houses which the council erected under this scheme adjoin this new recreation-ground. The plans for laying out children's gymnasium were prepared by Lieutenant-Colonel Sexby, the chief officer of the Parks Department, and, in addition to the usual gymnastic apparatus, seats and shelters have been provided, and caretaker's and store rooms built. The estimated cost of laying out the ground was £1,963.

The Victorian Jubilee Almshouses at West Hartlepool were formally opened on Friday. The houses are fourteen in number, and a reading-room has also been built in the grounds.

As the site of the Kirkgate Covered Market is required for the new Market Hall which the Leeds Corporation are about to erect, from the designs of Messrs. Leeming and Leeming, the markets committee invited offers for the present structure. The committee have accepted the offer of Mr. Walter Whitwright, Kirkstall-road, Leeds, of £1,150.

Mr. F. T. Elliott, who acted as surveyor to the Eccleshill Urban District Council before that township was absorbed by Bradford, has been appointed to a like position under the Isle of Thanet Rural District Council, at a salary of £200 a year.

The Worshipful Company of Makers of Playing Cards offers the "H. D. Phillip's Prize" of £10 10s. for the best special design for the backs of playing cards. Three other prizes of £5 5s., £3 3s., and £2 2s. respectively are offered by the Company for the next three best of such designs. Particulars may be obtained of Mr. W. Hayes, Clerk to the Company, Guildhall, London, E.C.

Colonel Luard, R.E., Local Government Board inspector, held an inquiry at the town-hall, Leigh, Lancs, on Friday, into the application of the town council for sanction to borrow £1,490 for the extension of the free library and newsroom, £3,110 for the extension of the technical school, and £1,220 for the purchase of the freehold land required for the extensions. Mr. P. Thomas, town clerk, explained that the technical school and free library building was erected in 1894 at a cost of £14,165.

Building Intelligence.

BARNES, S.W.—The supply from the Barnes and Mortlake electricity works, carried out by the urban district council, under the direction of Mr. W. Farley, C.E., of Westminster, was formally inaugurated on Wednesday week, the 1st inst. The generating station is situate on the north side of High-street, Mortlake, adjoining the Thames towing-path, on what was part of the council's depot. It comprises engine-house 43ft. by 32ft., boiler-house of like dimensions, coal-store, offices, test-room, battery-room on first floor 65ft. by 65ft., with open timber roof, &c. The buildings generally are one story high, except in the front, where there are two, and are built in stock bricks, with blue-brick plinth, red-gauged arches, and red brick and terracotta dressings, and the front portion is finished with a parapet and stone coping. The chimney shaft is octagonal, of stock bricks, with red-brick quoins and dressings, and rises to a height of 120ft., being finished with a terracotta cap. The building contractors were Messrs. Munday and Sons, and the boilers, steam plant, and condensers were supplied by Messrs. Babcock and Wilcox, Ltd.; Messrs. Siemens Brothers having built the steam dynamos.

BURTON-ON-TRENT.—Memorial-stones of the new headquarters of the Y.M.C.A. were laid last week. The new premises extend from High-street to Friars-walk, with a frontage the whole depth along Whitehurst's-passage. The main entrance will be in High-street. On the ground floor will be the general secretary's office, a recreation and tea room, boiler-house for the heating apparatus, and lavatory block with bath-room, &c. Approached from the entrance-hall by a glass-covered corridor is the gymnasium, 48ft. by 29ft., and 19ft. high. This room will be provided with a glazed brick dado and a bordered ceiling. The remainder of the ground floor to Friars-walk is occupied by the lecture-hall, 82ft. by 30ft., and 26ft. high to the ceiling. This hall will have a wood-block floor sloping from the entrance end to the platform, and a wooden dado 6ft. high. The roof will be of pitchpine timbers, resting on carved stone corbels. In connection with this hall are cloakrooms with lavatories attached. On the first floor, which is approached by a stone staircase, is provided a reading-room with open-timbered roof, and committee-rooms, classrooms, photographic studio and dark-room, with rooms for the caretaker. Other portions of the premises have been let off into suites of offices and a café restaurant. The whole of the premises will be lighted by electricity. The general contractor for the works is Mr. R. Kershaw, of Princess-street, Burton. The architect is Mr. Thos. Jenkins, of High-street, Burton.

COVENT GARDEN. Extensive improvements are being made at the Royal Italian Opera House, under the direction of Mr. Edwin O. Sachs, architect. The works include structural alterations for the audience and for the management, and the equipment of the stage. The alterations for the audience comprise the remodelling of the exit and entrance arrangements of the stage, and the formation of a special stalls corridor, so that the stalls, with their corridors, now form an independent whole, having their own conveniences, cloakrooms, &c. The old-fashioned front and apron of the stage, which used to protrude into the auditorium, has been abolished, and the orchestra set closer to the curtain line. This will bring the "picture" more in accordance with modern ideas, and will allow of the arrangement of extra rows of stalls. The structural alterations for the management, at the back of the house, include an entire remodelling of the storage and wardrobe arrangements, as well as the equipment of new workshops. The large property shop, which used to be over the auditorium, has been accommodated on a large additional floor, erected over the whole of the back wing of the building. This back wing has been remodelled, and now contains suites of rehearsal rooms, distributed on three floors, and equipped with all modern sanitary arrangements. The wardrobe, dress-making, and tailoring department has been housed on the south side of the stage, in suites of rooms comprising three upper floors, having two independent staircases and intercommunication by means of a hydraulic lift. On the north side of the house a suite of one of the upper floors has been retained as an armoury, a second has been

remodelled for storage purposes, whilst a third now comprises a set of offices for the stage department. Below stage level on either side of the house the various suites of rooms have been remodelled and modernised as far as possible. The back portion of the stage has been separated off from stage level downwards, with the view of forming a large scenery store, built on fire-resisting lines. The alteration of the stage comprised entire gutting from top to bottom, so that nothing of the old stage from "gridiron" to cellar remains, with a small exception of a couple of wood fly galleries, and also the entire unroofing of the stage, raising the structure by 20ft., and reroofing on modern lines. It involved a considerable amount of excavation work, with a view of forming deep pits to take certain parts of the mechanism. An entirely new "gridiron" had to be constructed right across the stage; two "gridiron" galleries had to be constructed on either side, and a number of light connecting ways running across the stage. An entirely new stage, including all construction parts, had to be provided, together with a "mezzanine" floor. The opening of the stage towards the auditorium had to be equipped with a fire-resisting curtain (the largest in London), and a strong party-wall built from stage level downwards into the cellar. In connection with this constructional work, the whole of the gridiron galleries stage and mezzanine had to be refloored, and the entire cellar or superficial area of the stage concreted over. The scene docks on either side of the stage had to be remodelled. In connection with the constructional alteration of the stage, an entirely new stage equipment had to be provided on modern lines, everything above stage being now worked on the Brandt patent counterweight system, and everything below the stage on Sachs' patent electrical bridge system. Mr. Thomas Kissack has acted as clerk of the work. The general contractors were Messrs. Colls and Son, the iron-work contractors for everything above stage level were Messrs. Lindsay, Neal, and Co., Ltd., whilst the entire complicated structural and mechanical ironwork below stage level, including the stage "bridges" and lifts, was by Messrs. Drew-Bear, Perks, and Co. The electrical-power plant for the "under machinery" was provided by the Thames Ironworks Shipbuilding Co., Ltd., of Blackwall, whilst the whole of the elaborate counterweight mechanism above stage level was provided by Mr. F. Brandt, of Berlin, who personally attended to the installation of his appliances in London.

EXMOUTH. A new Baptist chapel was opened on Wednesday week. It stands in the Victoria-road, and has been built by Mr. G. Hayman, from designs by Mr. P. Kerley, of Exmouth, at a cost of about £1,150. The dimensions are 50ft. by 32ft., and there is seating accommodation for 300 and choir. The rostrum is partly set in a bay-shaped recess. The whole of the flooring is in wood block, while heating has been provided for on the hot-water system, with radiators, the ventilators being Boyle's patent. The elevation has been carried out in limestone, with Bath-stone dressings, and the general style is a Free Gothic. A large tracery window in the centre gable is a chief feature of the front. Space has been left at the back for the erection at a later date of schoolrooms and classrooms.

HASLINGDEN.—A Baptist Church at Bury-road, Haslingden, Lancashire, was opened last Wednesday, and will accommodate on the ground floor 326, in the galleries 279, and in the choir 20—total 627, or a mixed congregation of over 700 persons. There are four vestries attached, also a choir vestry adjoining the organ-chamber, which is in the form of a semicircular apse, with the choir in front of organ and behind the pulpit. The walls are of rock-faced stone, with ashlar stone dressings. The cost is over £4,000. The architects are Messrs. George Baines, F.R.I.B.A., and Reginald Palmer Baines, 5, Clement's Inn, London.

In the Manx High Court at Castletown, on Monday, Messrs. Dean and Co., Birmingham, obtained an execution for £542 against Alfred Hemming and the Grand Theatre Co., Ltd., Douglas, for work done.

The Thornhill District Hospital, Dumfries-shire, is being warmed and ventilated by means of Shorland's patent Manchester stoves, patent exhaust roof ventilators, and special inlet tubes, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

Engineering Notes.

construction of several new sidings to serve the requirements of the local collieries; and the intention of the N.E.R. Company to erect extensive shops at the new permanent way centre. These shops are intended to serve the requirements of the local collieries, and the intention of the N.E.R. Company to erect extensive shops at the new permanent way centre. The Wear Valley branch line and the Consett and Blackhill branch line will also come under the control of the appointed engineer, Mr. C. F. Bengough. The buildings will be of iron and steel, and will also be used for the business of the new permanent way centre. The contract for the whole of the work has been let to Messrs. J. D. & S. Sons, of Bishop Auckland, and when completed the shops will give employment to over 200 hands.

Improvements are in progress at the Victorian Wharves at Cattewater in Plymouth Harbour, constructed and owned by Mr. C. L. Duke, and formally opened in August last. The construction of a pier jutting out into the Cattewater has been commenced, and work upon it is now in full swing. Built of concrete, the pier will be 500ft. long and 50ft. broad, and on the east side will have a depth of 27ft. of water at low tide. Besides affording additional shelter to the dock, the pier will, when completed, increase the present wharfage to a length of 1,500ft. At a cost of £14,000, the Cattewater Commissioners are at present dredging the lower harbour to a uniform depth of 17ft. at low spring tides, and at his own expense Mr. Duke is deepening the approach to the Victoria Wharves to a similar depth. On the west side of the dock No. 2 warehouse, with a capacity of 16,000 superficial feet of floor space, has been completed, and No. 2 warehouse, with an area of 20,000ft. floor space is rapidly approaching completion. Both these buildings are stone structures with concrete floors. On the east side of the dock transit sheds are in course of erection, which will have a superficial floor space of 6,000ft. Other buildings for storage and transit will be erected as the traffic develops. Over a mile of railway sidings has been laid in the wharves, the track being laid with wood blocks, and both the Great Western and South-Western Railway Companies have direct access to the dock. Steam cranes have been provided, and these are to be supplemented shortly by hydraulic cranes, hoists, conveyors, and other appliances.

NEWCASTLE-ON-TYNE.—A novel and interesting engineering feat was accomplished on Sunday in Newcastle and Gateshead, when the spans of the new Redhough Bridge connecting the two towns, which have been built several feet to the eastward of the position they were to occupy, were moved over into their permanent resting-places. The new Redhough bridge has been erected on precisely the same site as the old one occupied, but the traffic has gone on uninterrupted, save for a few weeks during which the passage of vehicles was prohibited. The proprietors of the old bridge intrusted the designing of the new structure to Messrs. Sandeman and Moncrieff, M.M.C.E., of Newcastle, and the contract for raising the structure was given to Sir William Arroll and Co., of Glasgow. The outline of the new bridge is of American type, but the details are in accordance with English practice. Portions of the old approaches are left, and these are the only parts of the old structure that remain. There is no difference between the dimensions of the old bridge and the new. The centre line of the new bridge is identical with the centre line of the old bridge, the width between the centres of the main girders is the same; the level of the roadway, and the height above water, all correspond. The two large central spans are 252ft. from pier centre to centre, and the two outer spans are 170ft., making the total length of the bridge and its approaches 1,190ft. The width of the bridge is 40ft. between the main girders, and either side a footway 7ft. The bridge is built of steel, and its total weight, including the gas and water mains, is about 2,900 tons. The bridge is

carried on cylinder foundations, each 8ft. in diameter, and sunk to a depth of more than 50ft. below low water. The new piers were built round the old ones, inclosing them, and the new roadway was built a little above the old roadway, and 4ft. to the eastward of it. The old piers were removed, and the roadway was lowered to its proper level; and what remained to be done was to move it over into line with the rest of the bridge. This operation took place shortly after dawn; an hydraulic jack was fixed at each end of each of the four spans—eight jacks in all. Each span rested upon well-greased rails on the piers, and the gas and water-mains were disconnected. The work of moving the bridge was accomplished to the entire satisfaction of the engineers and builders. The moving of the bridge was under the immediate supervision of Mr. J. M. Moncrieff, of the firm of Sandeman and Moncrieff, engineers, who designed the bridge, and has had the care of its construction. He had the assistance of Mr. George Huntley, his resident engineer at the bridge works. Mr. Andrew Biggart represented the builders of the bridge, and Mr. William McDonald, the contractors' manager, had the immediate direction of the work and the workmen.

STAINED GLASS.

BERMONDSEY.—On Sunday last at the Roman Catholic Church of the Most Holy Trinity, Dockhead, a stained-glass window, lately erected in the chancel, was unveiled. The central light had recently been provided with a new figure in memory of the late Miss Mary Newton. The sidelights, now unveiled, have been erected to the memory of the late Mr. Henry Pauling by friends who had been connected with him in South Africa. The window consists of five lancet openings, each 23ft. long by 2ft. 3in. wide. Each light contains two large figures, representing saints, apostles, martyrs, &c., grouped around the central and principal figure of the Sacred Heart, below which, in the lower part of the centre light, is represented the Blessed Margaret Mary kneeling in adoration. In the side lights are figures of our Lady and St. Joseph, and below them the Apostles St. John and Peter. The patron saints, St. George of England and St. Patrick of Ireland, occupy the upper part of the outer lights. Below these figures in the outer lights are St. Athanasius and St. Thomas of Canterbury in full vestments. The figures have diaphanous robes and vestments, and are divided by broad canopies of the style of the 15th century. The work has been designed and carried out by Mr. E. J. Prest, of Clarence House, Haverstock Hill, N.W.

The formal ceremony of opening the public baths at Balaam-street, near Barking-road, Plaistow, erected by the West Ham Corporation, was performed on Thursday in last week. The contract for the erection of the baths, apart from furnishing and embellishments, was for £22,308. There are two large swimming-baths, 100ft. and 60ft. in length respectively, with warm baths.

At Tuesday's meeting of the London County Council the highways committee reported that Mr. G. Welling, permanent-way engineer, had decided to retire from the service of the Council on account of failing health. Mr. Welling was for 20 years in the service of the London Tramways Company. They recommended that his son, Mr. John Welling, should be appointed to fill the position at £350 a year, rising to £400 a year. The recommendation was adopted.

Messrs. Wm. Potts and Sons, clock manufacturers, of Leeds and Newcastle-on-Tyne, have received instructions from the mayor and corporation of Newcastle-on-Tyne to erect new clocks at St. Mary's Church, Rye Hill, and St. Anne's Church, Newcastle-on-Tyne. They are also making new clocks and chimes for St. Mary's Parish Church, Ambleside, Westmoreland, and Ledham Parish Church, near South Milford, West Yorks, and a large illuminated clock for the county of Durham.

The restoration of the west front of Bath Abbey is now complete. A dedication service is to be held on Thursday, June 6, when the Bishop of Bath and Wells has consented to preach and perform the ceremony.

The death occurred on Sunday, at Oswestry, of Mr. G. Owen, J.P., one of the oldest and best-known engineers in the country. He constructed the Cambrian, Mid-Wales, Wrexham, and Ellesmere, and other important railways. He was a member of the Oswestry Town Council continuously since 1860. He served the office of Mayor twice, and was elected alderman in 1874.

Lord Stanley, M.P., on Saturday formally opened the new house of the Formby Golf Club, near Liverpool. This clubhouse, which replaces the one destroyed by fire 18 months ago, has cost £9,000, and is said to be amongst the finest in the country.

TO CORRESPONDENTS.

[We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as fully as possible, as there are many demands upon the space allotted to correspondents.]

It is particularly requested that all drawings and all communications respecting illustrations or literary matter should be addressed to the EDITOR of the BUILDING NEWS, Clement's House, Clement's Inn Passage, Strand, W.C., and not to the publishers of the staff by name. Delay is not unfrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

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Correspondence.

A DISCLAIMER.

To the Editor of the BUILDING NEWS.

SIR, In your report of the meeting of the R.I.B.A. on the 29th ult. I am credited with having seconded Mr. Woodward's motion; as I am not a member of the Institute, and was not at the meeting, this is obviously an error of your representative.—I am, &c.,

ELLIS MARSLAND.

Hon. Sec. of the Society of Architects

[Our error entirely. It was Mr. Wylson, of Messrs. Wylson and Long, who seconded the motion.—Ed. "B.N."]

PORTLAND CEMENT: NEW CONDITION TEST.

SIR, It would be interesting to know the evidence for the reliability of the test which Mr. Patchett gives in your issue of 3rd inst. Portland cement is completely decomposed by water, the reactions resulting in the liberation of certain amount of calcium hydrate, the quantity

varying according to the relative proportions of lime, silica, and alumina present. Therefore on testing with ammonium oxalate the water in which cement has been shaken up a precipitate forms, but how this, or any portion of it, can be taken as indicative of *free* lime in the cement I fail to see. Perhaps Mr. Patchett will explain.—
I am, &c.,
New Bilton, Rugby, May 6. D. BILLSON.

SIR.—Allow me to correct a slight error in my communication respecting Portland cement in your last issue: for "grains" read grammes.—
I am, &c.,
3, Lime Villas, Greenlanes, Birmingham,
May 7. A. PATCHETT.

Intercommunication.

REPLIES.

11710. **Capacity of Cast-Iron Columns.**—*"Times"* had better consult tables of the formulae of good old Rankine. The section you show is unusual, but the dimensions will, no doubt, be quite sufficient to support the weight you mention; for a cast-iron column of this diameter and of this height will carry a safe load of 10 tons. Of course, the section of columns you show will strengthen both sides were equal, i.e., iron columns. G. H. G.

11712. **Fireproof Lining for Wooden Buildings.** In answer to "K." I should be much obliged to receive articles on the Building Trades Exhibition at London in the *Building News*, where he will find notices of two or three very excellent fire-resisting materials well suited for lining wooden floors and workshops; the best of material is known as "Compo-board." Apply to the British Compo-Board Co., Golden-lane, E.C. 4.

11713. **Substitutes for Plaster.**—There is a considerable number of materials which may be used as substitutes for plaster in cottages. Consult pages of advertisement.

11714. **Drawing of Moments of Beam.** See *Notes on the Construction of Buildings*, by R. H. G.

CHIPS.

The Cleveland and Durham Electric Power Bill, which contains the scheme of a company for providing electric power at a cheap rate to manufacturing concerns in the district, has been approved by a House of Commons Select Committee.

We shall hear no more of the Rosherville Gardens as a pleasure resort. The lease of the place as a going concern failed to attract a single bid when offered for sale on Wednesday week, and the fittings, live-stock, &c., were then disposed of under the hammer. The private arrangement for the purchase of the grounds entered into by a firm of London auctioneers with the hope of a resale to the authorities of Gravesend and Northfleet was never concluded, the decision of the authorities not to purchase being fatal to the transaction.

The new Race Stand buildings on the Roodee course at Chester, built a few years ago at a cost of £15,000, have now been extended and improved at a further outlay of £3,000, and were used for the first time in a complete form on Tuesday. The structural alterations have been carried out by Messrs. Parker Bros., Chester, from the designs of Messrs. Magnall and Littlewood, architects, Manchester.

In the case of the application on behalf of James Richard Mitchelmore, Southampton, builder, trading with Henry Honeychurch as Honeychurch and Mitchelmore, an order of discharge from bankruptcy has been suspended for 12 days, ended May 25, 1901.

The Earl of Rosebery has consented to open a new park, Willesden, on Saturday, May 25. This is the new title of the Dollis Hill estate of 90 acres, bought by the Willesden District Council for a public park and recreation ground at a cost of £100,000.

The Massachusetts Institute of Technology—the largest college of applied science in the United States—will hold entrance examinations in London on June 27 and 28, for those who desire to study engineering outside England. Full particulars may be obtained from Mr. Robert S. Ball, 5, Cross-street, Manchester. For some years past English students have gone in small numbers to the Institute, and the present examinations, which will be conducted by Professor H. W. Tyler, Secretary of the Institute, are offered for the convenience of those who may wish, before leaving home, to determine their ability to enter the school.

Messrs. Atkinson Brothers, Newcastle, have been commissioned to execute the stained-glass window which is to be placed in St. Cuthbert's Church, Allendale, in memory of the late rector, the Rev. Dr. Mason.

LEGAL INTELLIGENCE.

AN ARCHITECT'S VALUATION. *HARDING V. EWING.*—An action has been heard by Mr. Justice Bruce, brought by Mr. Solomon Harding, of Chester, against Mr. Charles Anthony Ewing, architect and valuer, also of Chester, to recover damages for alleged negligence in making a valuation of certain house property at Liscard, near Birkenhead. Defendant denied negligence. In 1898 the plaintiff, who was the secretary of a building society at Chester, was in negotiation with a Mr. Allday, of Liverpool, with the view of making an advance upon four houses at Liscard. The plaintiff instructed the defendant to make a valuation of the houses—and he did so, fixing the value at £2,100. Relying upon this valuation, plaintiff said he made an advance of £1,250, and agreed to pay a further sum of £100 when the road upon which the houses abutted had been completed. Subsequently plaintiff discovered that the valuation was too high, and he now submitted that the defendant was guilty of negligence in making the valuation, because, in arriving at his figures, he relied solely upon information supplied by the mortgagee. Defendant contended that he was instructed by the plaintiff to get his particulars from the mortgagee, and that, as those particulars appeared to be fair and reasonable, he was entitled to rely upon them. He further said that his valuation was correct at the time it was made. Mr. Justice Bruce said he would take time to consider his judgment.

SURVEYOR'S UNSUCCESSFUL ACTION FOR FEES. In the King's Bench division of the High Court, Mr. Justice Bruce has given judgment in the case of "Daniels v. The Bown Products Company, Ltd." This was a claim by Mr. Joseph Daniels, trading as T. H. and J. Daniels, engineers, of Lingpill Iron-works, near Stroud, Gloucestershire, against the defendant company, who carried on business at Inchbrook, near Stroud, claiming £240 for his charges for professional services rendered in February, 1898, in connection with proposed new works at Inchbrook, consulting with Mr. Harris, manager of the defendant company, preparing plans and specifications for works and machinery, preparing detailed working drawings and specifications, and obtaining tenders for the carrying-out of the work, together with three complete sets of plans, &c. Defendants denied they instructed or authorised the plaintiff to do this work for them. Mr. Justice Bruce, in giving judgment, said the plaintiff sought to recover from the defendant company a sum of money by way of remuneration for work done by him as engineer and surveyor, and preparing plans and specifications for enlarging the business premises at which defendant company carried on their works. Defendants denied liability, and said they did not, nor did anyone on their behalf, instruct the plaintiff to prepare the plans and specifications in question. Defendant company was formed in 1895, and was managed by a Mr. Tom Harris. In 1897 negotiations were entered into between the company and a Mr. Massey, of London, with a view of giving Massey the option of taking a lease of the works. In November, 1897, an agreement was entered into between them by which, in consideration of payment of a sum of money, Massey was to have the option of taking a lease for 21 years, and there was a provision giving him the option of purchasing for £25,000 at any time within seven years of the date of the lease. Massey represented that he had a concession for a boracic mine in Asia, and intended to greatly enlarge the works. There was some conflict of testimony as to whether plaintiff knew of the negotiations for the extension of the works and reconstruction of the company; but he thought the reasonable conclusion to be drawn from the evidence was that he knew it from the first. Eventually, the negotiations for the reconstruction and rebuilding went off, and the plans were never used. Plaintiff sent in his account to Harris, who told him to send it on to Massey, in London, as he was the person liable. Massey replied denying his liability. In his view, it was evident that the work was not done for Harris on behalf of the defendant company, but for Massey, the promoter of the proposed new company, and he was of opinion the plaintiff had not established his case against defendant company, that Harris had no power to bind the company, and that plaintiff must have known all along he was doing the work for Massey, and not for the company. There must, therefore, be judgment for the defendants, with costs.

BEEHIVES AND THE LONDON BUILDING ACT.—*DICKSEE V. HOSKINS.*—Judgment has been given by the Lord Chief Justice and Mr. Justice Lawrance in an appeal by case stated from the decision of a Metropolitan Police magistrate, allowing an appeal under the London Building Act, 1894, from a notice of objection to a proposed building served by the appellant, who is a district surveyor under the Act, upon the respondent, a builder. The question was whether the proposed building was one to which section 74 (2) of the London Building Act, 1894, applied. The proposed building was situated at No. 87, Old Kent-road, and was the re-erection of a licensed beerhouse on the site of an old beerhouse called the Horse Shoe, No. 41, when built, exceed ten squares in area, and was intended to consist of a basement, two floors, and an attic. The trade of the beerhouse was to be carried on on the basement and ground floor, and the licensee and his family were to reside in the upper floors of the building. The floors separating the ground floor from the first floor and the staircase leading to the first floor were not intended to be constructed of fire-resisting materials, and the learned magistrate found that, if the subsection 2 of section 74 of the London Building Act, 1894, applied to the building, the provisions of that section would be contravened. The learned magistrate also found as a fact that the basement and ground floor of the building were intended to be used for the purposes of the trade of a beerhouse, and that the part above the ground floor was intended to be used as a dwelling-house for the licensed occupier, but held that the case was governed by the decision in "Carritt v. Godson" (1899), and allowed the appeal and overruled the objection of the district surveyor. The district surveyor appealed. The Court dismissed the appeal. The Lord Chief Justice said that he did not base his decision entirely on "Carritt v. Godson," because in that case there was an additional ground for deciding that the house therein in question was not within the London Building Act, 1894, section 74 (2)—namely, that the lobby which gave access to the staircase of the house opened into a backyard. In his opinion, the section was intended to apply to buildings part of which were used for trade and manufacture and the other part as a dwelling, and it was not intended to apply to a building certain rooms of which were used as a dwelling. The appeal would, therefore, be dismissed. Mr. Justice Lawrance concurred. He said that he agreed to the extension of the principle in "Carritt v. Godson" laid down by the Lord Chief Justice.

AN ARCHITECT AND HIS TEENAGE SON. MR. M. D. Wells, builder, Honeywell-road, Wandsworth Common, sued for £10 for money lent to the defendant, Mr. Ernest W. Crickmay, architect, 4, Mincing-lane. It was stated by the plaintiff that in April, 1897, he had a contract for carrying out some alterations at a public-house at Lavender Hill, the defendant being the architect who was employed by the owner. The defendant asked him for a loan of £10, and the money was lent. As the defendant had not repaid it he was now sued. The defendant denied that he had ever borrowed any money. The £10 was paid to him in the ordinary course of business, for supplying the plaintiff with a copy of the plans on which the alterations were being carried out. At the time the plaintiff asked how much he owed him (defendant), and the witness said 10 guineas. The sum was agreed at £10, and the money paid. No application had been made to him during the four years which had elapsed since the money was paid. The Deputy Judge said that every surrounding circumstance was against the defendant. There must be judgment for the plaintiff, with costs.

AN ARCHITECT'S FEES.—*MATCHAM V. THE NORTHERN THEATRES COMPANY, LTD.* This was an action brought in the King's Bench Division on Monday (before Mr. Justice Mathew and a special jury) by Mr. Frank Matcham, an architect, against the defendants, who have theatres in several towns in the North, to recover £1,059 12s., his fees for preparing plans, specifications, &c., for a new theatre at Huddersfield. Defendants said that the charges were excessive and unreasonable. They further said that the plaintiff was employed as their architect for the construction of the theatre in question for a commission of 4 per cent. on the cost of the building, subject to the express condition that the total cost of the theatre was not to exceed £15,000. The minimum cost of the theatre, if built in accordance with the plaintiff's plans, would have been £28,000, and the defendants therefore decided that the theatre should not be proceeded with, and the work done by the plaintiff was of no use to the defendants. They therefore maintained they were not liable to pay him anything. The plaintiff's case was that in May, 1899, he was instructed by the defendants to prepare plans, specifications, &c., for a new theatre which they proposed to erect at Huddersfield. He carried out the work, and he submitted that he was entitled to recover £1,059, being 2½ per cent. on the estimated cost of the theatre (£22,183), £500 for getting out quantities, and £5 18s. 6d. for railway fares. Plaintiff denied that the price of the building, with an engine-room and water-tower, was limited to £15,000, and said that with economies the work could have been carried out for £20,000. The jury found for plaintiff for £325, and judgment was entered accordingly, with costs.

AN ARCHITECT'S APPEAL.—*HARRIS V. BABB.*—In the King's Bench Division, the case of "Harris v. Babb" has come before the Lord Chief Justice and Mr. Justice Lawrance, sitting as a Divisional Court, on appeal by the plaintiff, an architect, against a decision of Sir H. Lloyd, County-court Judge, sitting at Wrexham, in favour of the defendant, a building owner. It appeared

PARLIAMENTARY NOTES.

THE HOUSE OF COMMONS. In reply to Mr. H. H. Jones, Mr. L. J. Smith on Tuesday. I am glad to hear that the bill will be introduced in the House of Commons, which will deal only with the main principle of control for purposes of health. The series is intended as a guide to rural district councils wishing to make by-laws on the subject, and will be specially applicable to places consisting of scattered dwellings. It will be competent to a district council in any particular case to propose any modifications and additions which appear to them necessary to meet the circumstances of the locality. The model is only intended by way of suggestion to the rural councils, with whom rests the initiative as to making by-laws.

CHIPS.

An inquiry was held on Wednesday at the town-hall, Heniel Hempstead, by Mr. W. R. Slacke, into an application to borrow £1,250 for road improvements within the borough.

Mr. J. S. Hendry, late borough surveyor of West Bromwich, has been elected surveyor to the urban district council of Cannock.

The preliminary work in connection with the construction by the London and North-Western Railway Company of a new branch line from Holland Arms, near Gaerwen, to the neighbourhood of Red Wharf Bay, a rising summer resort, was commenced on Monday.

There has recently been opened to the public at the British Museum a new Babylonian Room, which is an enormous addition to the memorials of the ancient world. It contains a complete series, unequalled elsewhere, of bricks and tablets of baked clay, with cuneiform inscriptions ranging in date from over 4,000 to 83 years before the Christian era.

At the town-hall, Wolverhampton, on Friday, Col. Durnford held an inquiry on behalf of the Local Government Board respecting proposals of the town council to borrow money to carry out a number of public improvements. These included £2,800 for providing underground conveniences in several parts of the town, £13,850 for the erection of a covered wholesale market, £12,000 for the purchase of properties to widen the corner of Queen-square and Victoria-street, £9,450 for providing cold stores and ice-manufacturing plant, and £1,405 for free library expenditure.

The total realisations at the Auction Mart, Tokenhouse-yard, for last week was £175,459.

Considerable progress has been made towards the completion of the electric tramway service on the north-western side of Manchester. It is probable that electric cars will be run on three routes early next month.

The Stamford town council, having received the sanction of the Local Government Board to borrow the sum of £50,000 for the purposes of sewerage and sewage disposal, resolved on Monday to instruct Mr. Everard, C.E., to proceed with his modified scheme, including the preparation of quantities.

Mrs. Woodroffe is presenting a tower and clock to St. Mary's Church, Oatlands Park, Surrey, in memory of her husband, one of the founders of the church.

Bailiffs last week entered into possession of the Knottingley Urban District Council's sewage farm, in the interests of Mr. Stansfield, one of the contractors, who has served the council with a writ for £1,000 for work done. For some time the engineers of the scheme (Messrs. Richardson and Lemuire, Leeds) have been financing the council, but apparently the limit of their goodwill has been reached. On Saturday the "man in possession" was withdrawn as the result of arrangements arrived at by the council at a private meeting. Whether the bailiffs became convinced that the assets seized were non-realizable or that the rates were already sufficiently mortgaged has not transpired.

On Saturday afternoon Sir George Kekewich, secretary of the Board of Education, opened the new Science and Art departments at the King's Middle School, Warwick, erected at a cost of over £3,000.

A Select Committee of the House of Lords had before them, on Monday, the Bill by which the City of Birmingham Tramways Co. are seeking power to construct three small new lines within the city for the purpose of linking up the existing tramways, and also to extend the tramway along Coventry-road so as to connect it with the authorised Yardley tramway. The Bill also sought certain powers with regard to the working of their tramways outside the city of Birmingham at the expiration of the present leases. The committee decided to sanction the proposed extensions, leaving it optional with the local authorities to assent to the electrification of the tramway and the extension of time for running powers.

WATER SUPPLY AND SANITARY MATTERS.

BRISTOL.—The new Yeo reservoir of the Bristol Waterworks Company, which is approaching completion, will be the sixth largest in Great Britain. The water area of the reservoir, when full, is approximately 450 acres, and the reservoir, when filled, will hold about 1,700,000,000 gallons. The reservoir has been formed by constructing an earthen embankment or dam across the valley of the Yeo at a point close to Blagdon. The embankment at its highest point is 43ft. above the surface of the ground, and the greatest depth of water in the reservoir will be 37ft. The length of the embankment is 530 yards, and over the top a carriage road has been constructed to take the place of a portion of the old road to Blagdon, submerged in the bed of the reservoir. The length of the lake formed by the reservoir will be about 1½ miles. The water is taken from the reservoir by a brick tunnel 10ft. in diameter, the water being controlled by large outlet valves. The bywash (for the purpose of discharging flood waters), 350 yards long and 188ft. wide at the crest of the weir, has been constructed in masonry, chiefly with Cheddar and Tytherington stone pitching, set in cement, while Forest of Dean stone has been used in a bridge constructed over the bywash, and in other ornamental parts of the work. The weir stones and the pitching of the inner slopes of the embankment are of Dartmoor granite. At the Rickford spring a gauge-house has been erected for measuring the water, which is conveyed to the reservoir by means of a 27in. cast-iron pipe, the distance being about two miles. Similar arrangements have been made with regard to the Langford spring, and the distance in this case to the reservoir is nearly 3½ miles, the pipe being 21in. in diameter. Adjoining the reservoir, engine and boiler-houses are in course of erection for the reception of pumping machinery, by means of which the water will be pumped through cast-iron pipes to the existing North Hill tunnel of the Bristol Waterworks Company, a distance of about five miles. The engines are of the compound rotative beam type. The engineers are Messrs. T. and C. Hawksley, of Westminster.

EXETER.—Mr. Donald Cameron, the city surveyor, reporting to the water committee of Exeter City Council as to the progress of the water extension works, says the 18in. rising main has been laid from the works at Pynes across the London and South-Western Railway and the back rivers to the road bridge over the Great Western Railway at Cowley, a distance of 2,070ft., the old 10in. main having at the same time been taken up to be cleaned off and coated ready for laying in continuation of the 14in. pipes already laid in Sylvan-road from the intermediate reservoir for the supply of the high-service district. These 10in. pipes, although laid something like sixty years ago, are in very good condition, except that, never having been coated, the rusty incrustation is such that, although but recently scraped, their effective diameter is but little more than 8in., and their discharging capacity less than a pipe of that diameter. This incrustation will now be prevented by coating the pipes. The pipes for completing the 18in. main to Danes Castle are being delivered as rapidly as they can be laid, with a good stock in hand.

SCUNTHORPE, LINCOLNSHIRE.—The water supply of Scunthorpe is obtained at present from shallow surface wells, which are constantly in danger of contamination. About two years ago the urban council decided to sink a deep bore as a source of water supply, and the contract was given to the Vivian Boring and Exploration Company, Whitehaven, for £5,000. After unexpected difficulties, the bore was made to the depth of 1,517ft., well into the red sandstone, and lined with tubing for most of the depth. The yield tests have just been made, and were satisfactory, a yield of 257,000 gallons per day being obtained. Two samples were submitted for analysis, one to Dr. Muter, the Lindsey county analyst, of London, and one to the Clinical Research Company, and the results have been received. They agree in practically every detail, and the result is a great disappointment. The water is organically pure, but brackish; it is much too hard for domestic purposes, and too saline to drink. Dr. Muter, says the sea water must get in somewhere. A conference of the water committee and the engineers, Messrs. Stevenson and Birstall, of London, is to be held on the matter.

The foundation-stone of a hall which is being added to the Station Hotel, Bitterne Park, Southampton, was laid on Wednesday week. The hall, which is to accommodate 300 persons, is being built by Mr. Brain, of Southampton.

A stained-glass window has just been erected by parishioners in Redlands Park Church, Bristol, as a memorial. The subject is the Journey to Emmaus, the evening sky and light foliage forming a background to the figures. The work is from the studio of Messrs. Joseph Bell and Son, College Green, Bristol.

the defendant for the balance of £99. Mr. Tobin, for the plaintiff, submitted that the County-court Judge ought to have entered judgment for the plaintiff, on the ground that the plaintiff was acting in

Co., and not as agent of the building owner, and therefore could not be sued for negligence. Mr. J. C. M. P. for the defendant, submitted that the County-court Judge was right, and dismissed the appeal, with costs.

COUNCIL.—Judgment was given on Tuesday in this case. The action was brought by the St. James's Hospital, which had been built by the County Council upon them to make certain structural alterations was *ultra vires*, and for an injunction against the County Council. In 1885 the plaintiffs made certain structural alterations to their music-hall at the instance of the Metropolitan Board of Works, the predecessors of the defendants. Those alterations were made at a cost of upwards of £7,000, and in the course of the work modifications were agreed to, one being the removal of a staircase without rebuilding, additional accommodation in case of fire being provided in another place. The County Council had issued a fresh notice, calling upon the plaintiffs to restore the staircase and make other alterations at a cost of £4,000. On the part of the plaintiffs it was submitted that was *ultra vires*, and a declaration that that was asked for. Mr. Justice Chelmsford, in giving judgment, said he had come to the conclusion that the plaintiffs' view of the sections of the Building Act was correct, and that the notice given in 1885 was a final notice. In his opinion, the defendants had only power to order further alterations in case there was danger of fire, and if they could be done at a moderate cost. He must, therefore, give judgment for the plaintiffs, with costs. Mr. Avory, K.C., for plaintiffs, waived his right to an injunction, and his Lordship then made a declaration that the notice in question was

A KENTISH HIRE BILL ALLEGATION. The case of "Barham and Marriage, Ltd., v. the London County Council" was heard on Tuesday before Mr. Under-Sheriff Burchell and a special jury in the London Sheriff's Court. It was a claim by Messrs. Barham and Marriage, Ltd., grocers, wine merchants, &c., for compensation in respect of the loss of leasehold and trade interest in the premises, No. 70, High-street, Kensington, which are being compulsorily acquired by the London County Council under their Improvements Act, 1893, for the widening of High-street, Kensington. The premises were held by the claimants under lease from a tenant in Christmas, 1898, at a rent of £200. Mr. E. Clarke, in opening, said Messrs. Barham and Marriage had a local office in the City and nine places of business in different parts of London. When the premises in High-street, Kensington, disappeared, they would be unable to get a house on the new line of frontage, and there was no place in the immediate vicinity where they could establish themselves. They had carried on business at this particular branch for 29 years. The premises were worth £100 a year, which gave a profit of £175 a year, in respect of which the claimants were to be compensated, and in respect of that item, including 10 per cent. for compulsory purchase, they claimed £4,000. A sum of £1,000 had been offered by the council, and £100 was claimed for the loss upon the stock. The net profits to the claimants in the business was £735 a year. He suggested that the business was worth £100 a year, and that the net profits to the claimants in the business was £735 a year. He suggested that the business was worth £100 a year, and that the net profits to the claimants in the business was £735 a year. The jury awarded the claimants £1,641 10s.

Through the instrumentality of Mr. F. G. Kotton, the London County Council has purchased the collection of local prints, maps, drawings, and books.

The London County Council has purchased the collection of local prints, maps, drawings, and books. The collection was purchased from Mr. F. G. Kotton, who has been instrumental in the purchase of the collection. The collection consists of local prints, maps, drawings, and books, and is being purchased by the London County Council. The purchase was made through the instrumentality of Mr. F. G. Kotton.

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 (SEE PAGE 627).
 NEW CHURCH AT SPRING GARDENS, NEW TOWN HALL, LONDON,
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Our Illustrations.

THE BAPTIST CHURCH HOUSE.

This building is the first to be begun in connection with the new avenue to the Strand, being on a site formed by the widening of Southampton-row to 70 ft. It is to contain the offices of the Baptist Union, together with council-room, committee-rooms, library, and publication department. The upper floors are arranged as suites of offices, which it is proposed to let to religious societies, and the back of the site is occupied by an octagonal chapel to take the place of the old Kingsgate-street Chapel, which has been demolished. A preliminary contract has been entered into by Messrs. G. S. S. Williams and Sons, and the basement is now being built by Messrs. Hazell and Hill. The architect is Mr. Arthur Kerr, of Gray's Inn, and an illustration is from a drawing by Mr. T. Hamilton Crawford, now exhibited at the Royal Academy.

LOCKE, EDDLEIGH, AND CO.'S BANK.

This bank, illustrated from the drawing now at the Royal Academy, was built some thirty years ago, from the designs of the late Mr. Richard Coad. It is now being enlarged by the absorption of some houses in Spring-gardens belonging to the bank. A new partners' room will face towards Spring-gardens, with a considerable extension of the clerks' department, strong-rooms, &c. Above that portion of the new building towards Spring-gardens there will be three floors of offices, which will be let. They are entered from that street. The new front is in the Queen Anne style, the lower story being faced with Portland stone, while the upper part is of red brick, with stone groins, cornices, &c. It has been designed by Mr. J. Oldrid Scott, F.S.A. The contractors are Messrs. Dove Bros., of Islington. The cost will be about £12,000. The house which has been occupied by Mr. Scott for several years is one of those which has been removed. He has taken new offices at 2, Dean's-yard.

ALL SAINTS CHURCH, KENSINGTON.

This drawing, now on view at the Royal Academy, and noticed in our review of the Exhibition last week, shows an important church about to be erected from the designs of Mr. G. F. Bodley, A.R.A. The interior includes a wide nave and aisles, double aisles being planned on the left-hand side of the church, which covers the whole area of the site. The distinguishing features of the design as already mentioned are the lofty columns and stone arches spanning both the nave and the aisles with richly traceried windows of large size. There will be a side chapel, a handsome screen, and a capacious chancel.

NEW TOWN HALL, MANCHESTER.

In designing this building it was necessary to consider the two distinct uses to which, by the

use of movable court fittings, it will be applied, and the accommodation is under two heads—(1) municipal and general purposes and (2) special sessions. The foundation-stone of the building will be laid by the Marchioness of Ailesbury to-day, and the drawing from which our present illustration was taken is included in this year's Exhibition of the Royal Academy. The building will be in the Late Renaissance style, to harmonise with the quaint character of the town, which has been almost entirely rebuilt since the fire of 1652. The walls will be of red brick, with Ham Hill dressings, and cream-tinted rough-cast for the upper story. The roof will be a high-pitched one, with broad eaves, and covered with dark red tiles. The cupola will contain the ventilator of the main hall, the ceiling of which will be carried up well into the roof. The wall panelling of this hall, with the doors and other joinery of the entrance-hall, is to be of oak. The contract has been taken by Mr. B. Hillier, of Marlborough, at about £7,500. The architect is Mr. C. E. Ponting, F.S.A. There is a smaller room (48 ft. by 37 ft.) for minor meetings, and for suppers at balls, &c. Outside the west end there is a house for the fire-engine and appliances. The first floor is approached by a stone staircase. The assembly-hall is 65 ft. 4 in. by 37 ft. 4 in., exclusive of bays, the height being 32 ft. from the floor. At the end is a recessed stage with retiring rooms. Separate cells are contrived in the basement for use during quarter sessions, and direct access to the dock is arranged for. The bench, the jury, and the profession are each provided for very conveniently, and a space for the public is arranged at the west end, with separate staircase from the ground-floor lobby. A room for the Bar is furnished with a private staircase, as well as the approach from the main staircase.

CHESTER CATHEDRAL: WESTMINSTER MEMORIAL.

This drawing is now on view at the Royal Academy. The great south transept of Chester Cathedral is at present undergoing restoration as a memorial to the late Duke of Westminster. Part of the memorial is to consist of an altar tomb, with a recumbent effigy of the Duke. The figure is to be executed by Mr. F. W. Pomeroy, and will be in white marble, while the altar tomb is to be in alabaster. The whole is to be inclosed by a railing in wrought iron and bronze. On the four angles of the latter the Westminster Talbot is to be represented bearing the standard on which is displayed the coat of arms. Mr. Charles J. Blomfield (eldest son of the late Sir Arthur Blomfield, A.R.A.) is responsible for the designs, as also for the restoration of the south transept.

EIGHTEENTH CENTURY ENGLISH PINE PORCH AND DOORWAY.

This porch and doorway of carved pine, early 18th century, is from one of the two houses in Great Ormond-street, formerly used as the hospital for sick children, pulled down to make room for the present extensions, and now in the South Kensington Museum. This doorway is probably the finest London example of its kind, and is certainly worthy of a better position in the Museum. It was bought for the moderate sum of £20. Some very fine ceilings and a good staircase in the house were, I fear, entirely destroyed. R. F. G. AYLWIN.

NEW BANK, TUNSTALL, STAFFS.

This building has just been erected in a prominent position in the town of Tunstall, for the Manchester and Liverpool District Banking Co., Ltd. The ground floor is devoted to bank purposes, and a manager's house is arranged on the floors above. The outside elevations are faced with Hollington stone first-floor high, and with golden-brown terracotta above, including the gables. The roofs are covered with tiles. The banking-room and manager's room are rather richly fitted up with oak block and mosaic floors. The walls are lined with teak panelling, and the ceiling richly panelled in plaster. The fittings are made in mahogany. Mr. W. Cooke, of Burslem, was the builder. The whole of the work has been executed under the direction of the architects, Messrs. Wood and Hutchings, of Tunstall and Burslem.

A church-house is in the course of erection at Folkestone from plans by Mr. Lacy W. Ridge, of London. It will contain a Matthew Westward Memorial Hall, nurses' home, boys' club and gymnasium, and also St. Eanswythe's schools.

PROFESSIONAL AND TRADE SOCIETIES.

EDINBURGH ARTHUR'S SEAT. (SEE PAGE 627).
 Mr. Goodchild, of the Geological Survey, conducted a party of students to the base of Arthur's Seat on Saturday, with the object of explaining what is known regarding the development of the physical features of the hill. As these now appear, they are all of quite recent geological age—the rocks now exposed having been until lately covered by other strata, which formerly extended over these parts. After the Edinburgh volcano had finally quieted down, which was in Lower Carboniferous times, an extensive subsidence of the earth's crust began, and was continued through many millions of years. As a consequence a vast pile of sediments, of marine as well as of estuarine origin, slowly accumulated over the site of the volcano. At a later period, before any of the New Red rocks began to be formed, these carboniferous sediments, and the volcanic rock included within them, underwent considerable disturbance within the earth's crust, and were much fractured and folded as a result of these derangements. Then they were slowly upheaved, and underwent enormous waste, nearly 20,000 ft. of rock having been slowly wasted away in some parts, as is the case at Clitheroe, in Lancashire—during this period. The rocks out of which Arthur's Seat has since been shaped were slowly raised above sea level during this episode. Then ensued another period of subsidence and denudation, during which, first the Trias, and then the marine and estuarine Jurassic Rocks were laid down over the surface just referred to. In times still nearer our own, these in their turn were slowly wasted away, their constituents being used up in the formation of a later set laid down elsewhere, until in the end the old volcanic rocks were re-exposed in their present position. It is out of the mass thus elevated that, in the course of long ages, rain, rivers, frost, and other sub-aerial agents have shaped the hill into its present form. On the motion of Mr. Henry F. Kerr, the president, a vote of thanks was accorded Mr. Goodchild.

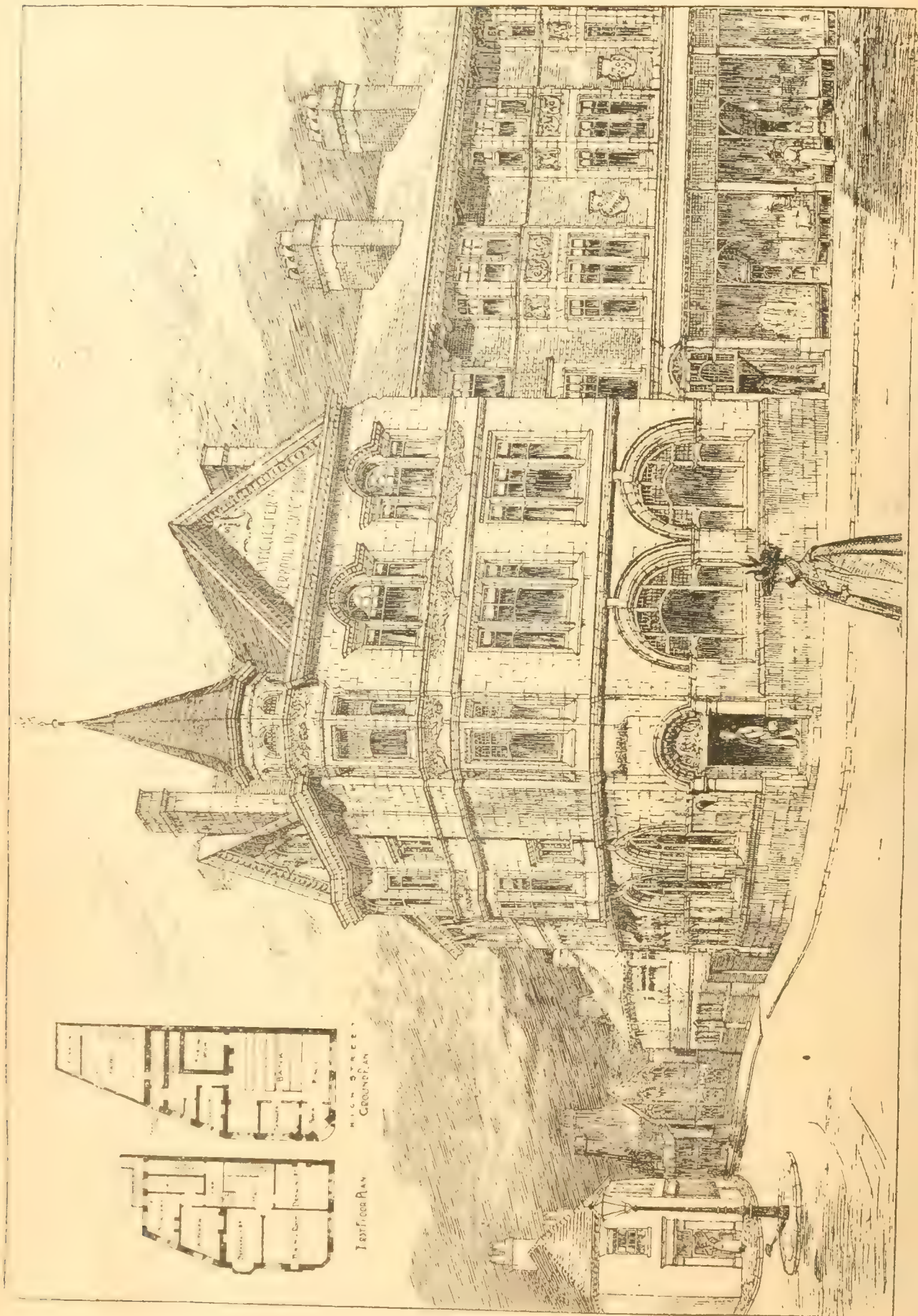
LEICESTER AND LEICESTERSHIRE SOCIETY OF ARCHITECTS.—The twenty-eighth annual report of this society states that the number of members on the rolls is 100, consisting of 11 Honorary, 45 Full, 12 Associate, 19 Assistant, and 13 Pupil members; showing a very satisfactory increase of 14 since the last report was issued. The council record with regret the deaths of the Lord Bishop of London, Dr. Creighton, and Mr. Joseph Goddard, F.R.I.B.A., J.P., two of the most distinguished members of the society. Reference is also made in the report to the steps taken by the council to bring about a more reasonable and sensible state of things in regard to the law of light and air, and to the recent abortive negotiations between the R.I.B.A. and the Institute of Builders as to the revision of the form of conditions of contract.

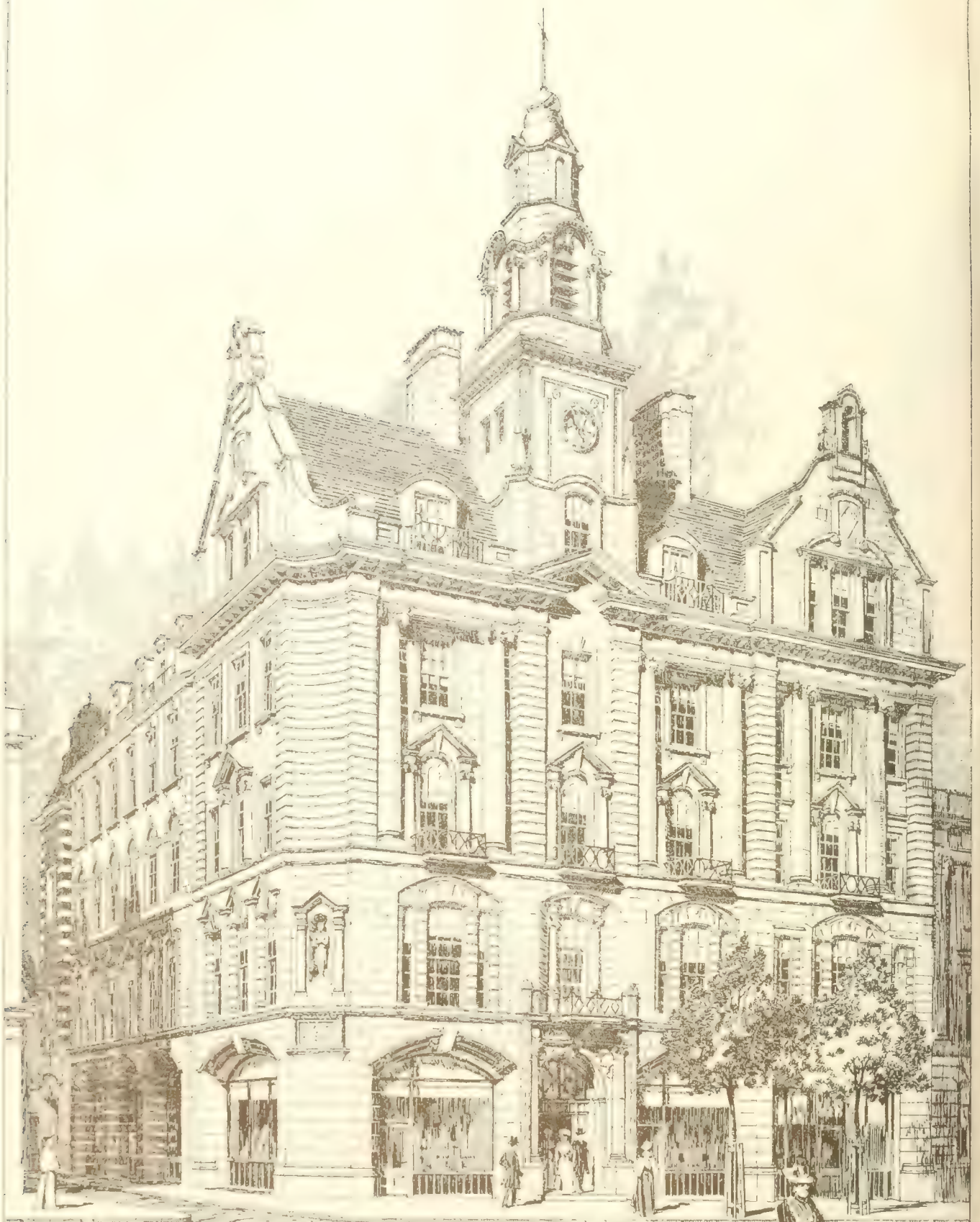
ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The annual meeting of the Institute was held at 9, Conduit-street, on Monday, the President, Mr. W. Emerson, in the chair. The report of the Council for the past year, a full summary of which was given in our last issue, p. 587, was adopted. Messrs. Hippolyte Jean Blanc, R.S.A., F.S.A.Scot., of Rutland-square, Edinburgh; Charles Fitzroy Doll, Southampton-street, Bloomsbury; and Edmund Harold Sedding, Athenaeum-street, Plymouth, were elected as Fellows, and Mr. Robert Douglas Wells, B.A., of Bedford-square, W.C., as an Associate. Pursuant to notice, Mr. Lacy W. Ridge proposed "That in the opinion of this meeting it is not desirable that By-law 26 be repeatedly suspended. The Royal Institute looks to the Council to put forward each year a nomination for the Presidency in accordance with the constitution of the Institute as laid down in the By-laws." After some discussion the motion was withdrawn.

The Kelso Town Council have engaged Mr. Harry W. Taylor, A.M.I.C.E., of Newcastle-on-Tyne and Birmingham, to report upon the burgh water supply with a view to their extension.

A stained-glass window has been presented to the church of St. Laurence, Thanet, by the parents of a member of the mounted infantry section of the Inns of Court Rifle Volunteers who served with the C.I.V. in South Africa. It was designed by Mr. H. N. J. Westlake, of the firm of Lavers and Westlake, the text taken for the purpose of illustration being Rev. xiv. 13.

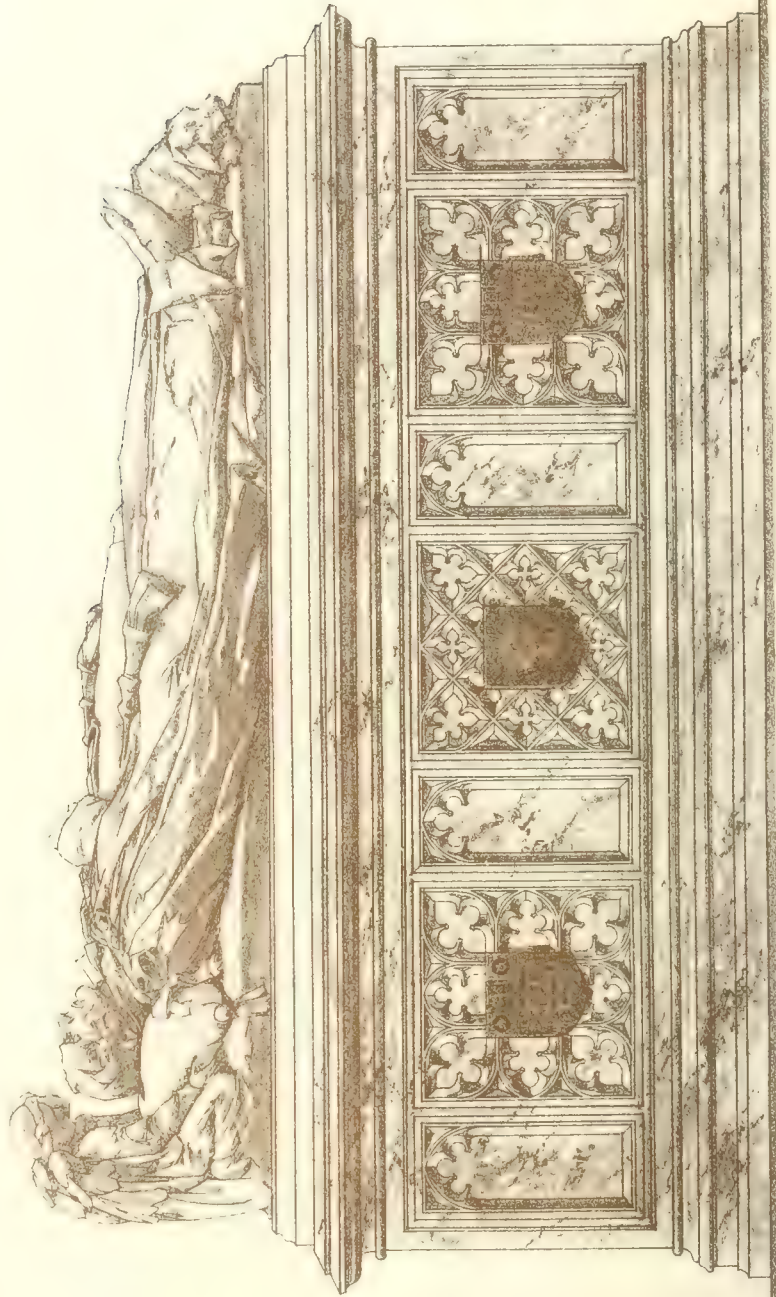




TIDE BAPTIST CHURCH HOUSE
SOUTHAPPTON ROW
ARTHUR REEN - ARCHITECT
ORAT'S INN

CHESTER CATHEDRAL

THE WESTMINSTER MEMORIAL



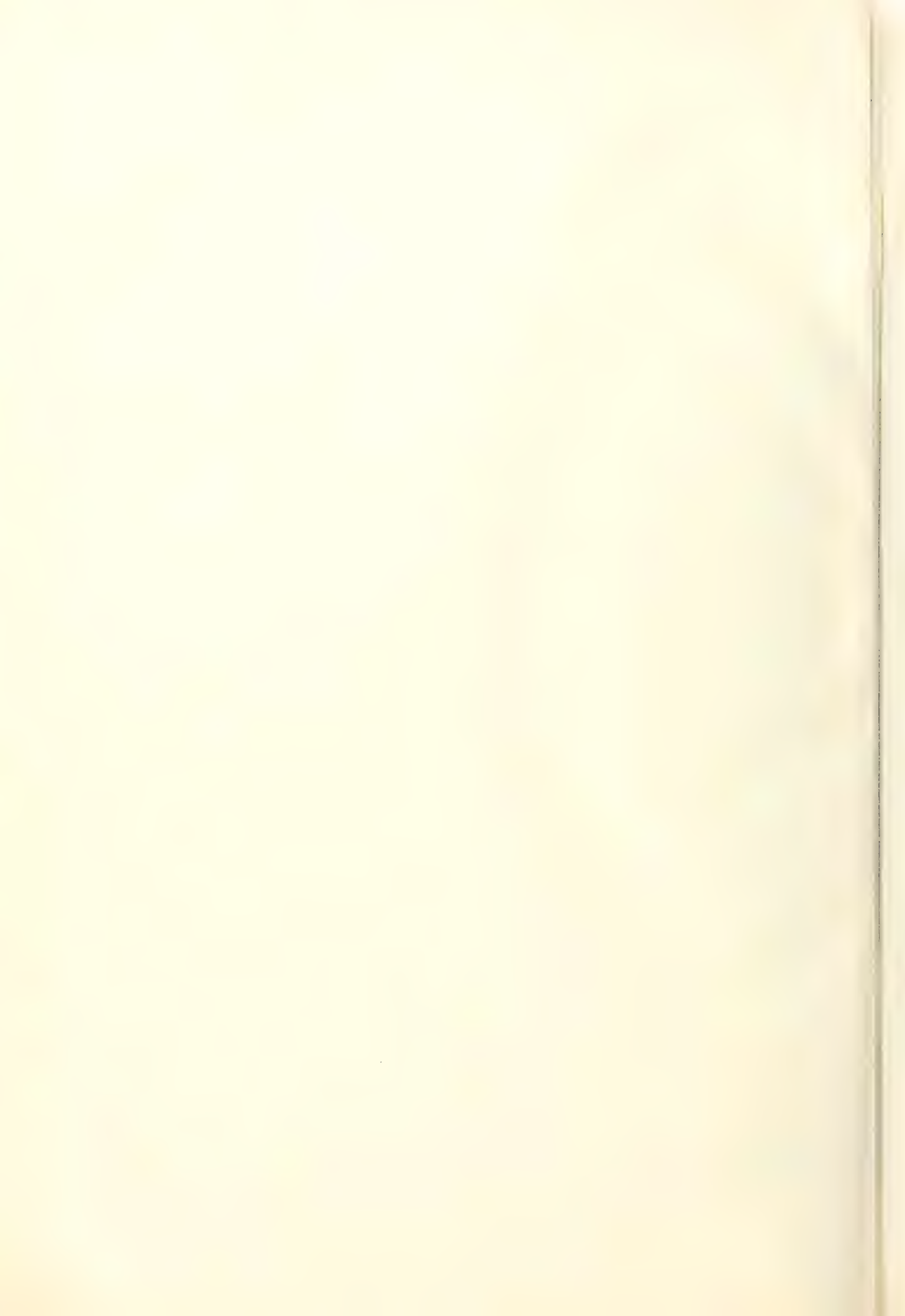
SIDE ELEVATION OF ALTAR TOMB



ELEVATION OF RAILINGS



Walter B. Blomfield
 2nd & 1st Avenue, Sec. 21





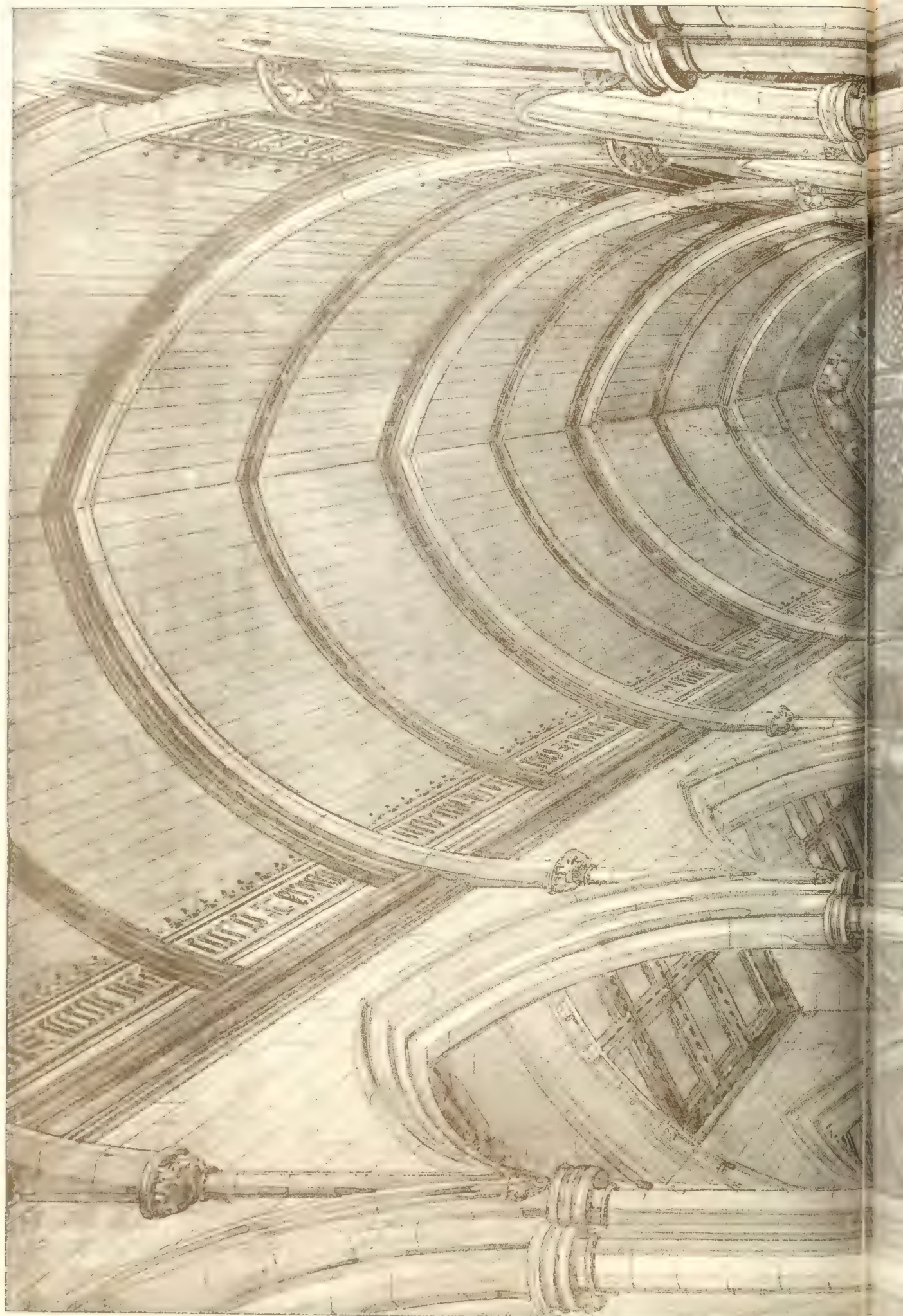


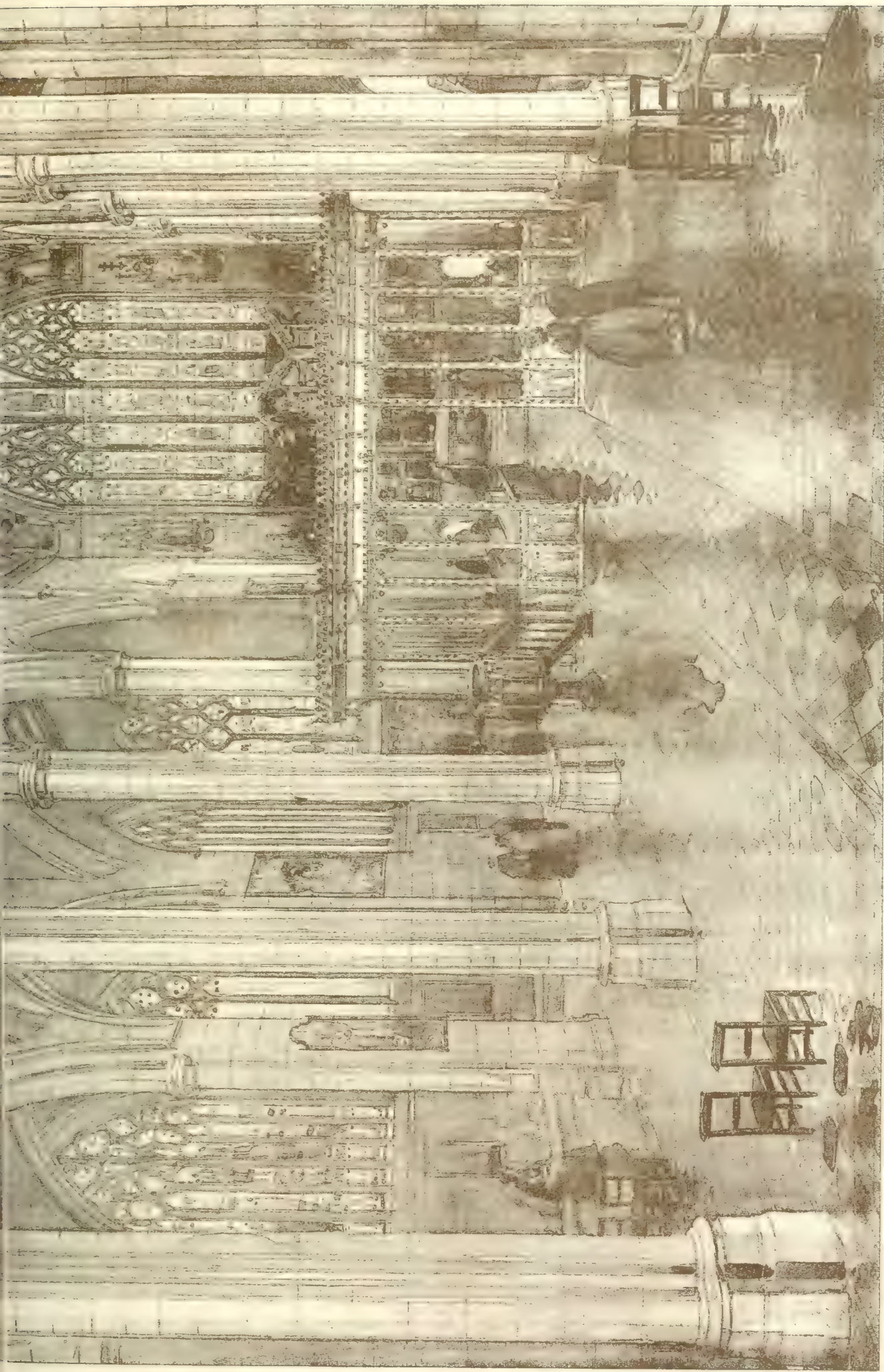
THE NEW TOWN HALL AT MARLBOROUGH







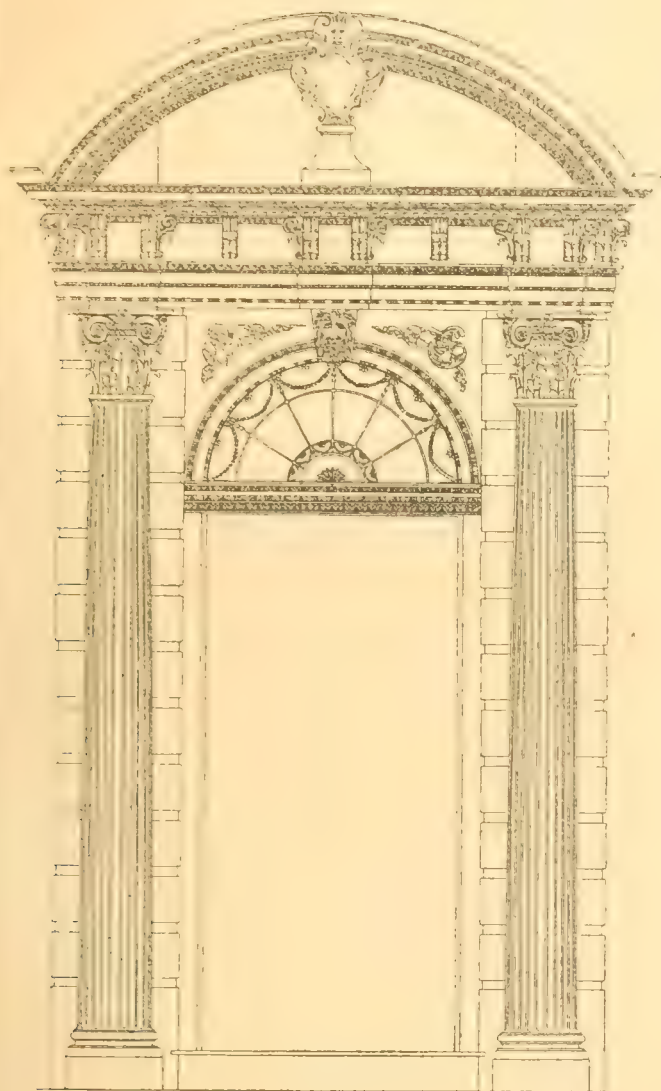




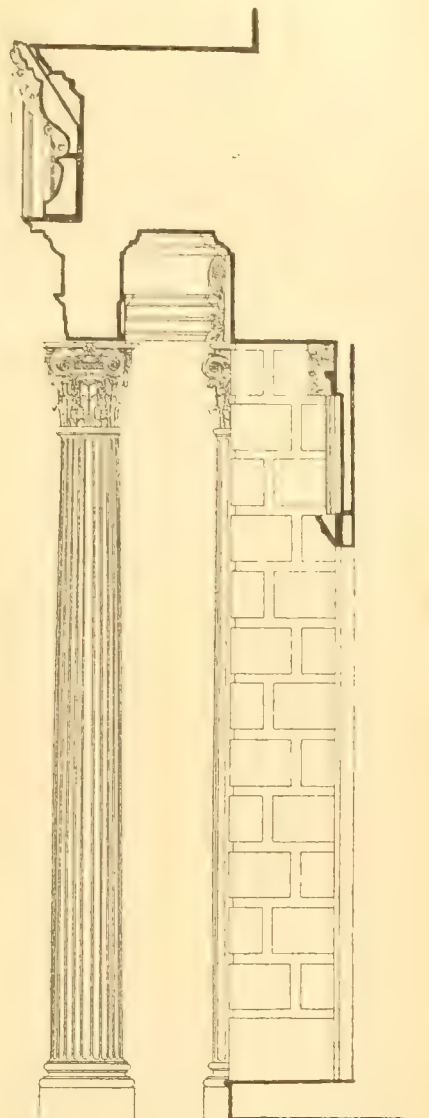
INTERIOR OF NEW CHURCH AT KENSINGTON OF ROBERT A. A. A. A.

Messrs Cox & Biddulph's Bank
New Front in Spring Gardens.
J. Clérie Scott F.S.A. Archt.





ELEVATION



SECTION



PLAN



PORCH AND DOORWAY

CARVED PINE ENGLISH 18th CENTY

FROM ONE OF THE TWO HOUSES IN GREAT ORMOND STREET
FORMERLY USED AS THE HOSPITAL FOR SICK CHILDREN

ON THE SITE OF WHICH THE PRESENT HOSPITAL STANDS

R. F. G. A. MENSCHOLDT

FEBRUARY 1901

The Board of Trade inspection of the Bideford and Westward Ho! Railway takes place on Tuesday next.

Trade News.

WAGES MOVEMENTS.

AMALGAMATED SOCIETY OF CARPENTERS AND JOINERS.—The forty-first annual report of this society has just been issued. The society was established in 1800, in 1888 it had 2,000 members, and now its membership is 65,012, with 501 branches. The general secretary, Mr. F. Chandler, is unable to refer to the satisfactory increase of their cash balance, which in the four preceding years it has been his pleasing duty to do, their savings averaging during these periods upwards of £30,000 per annum; but he congratulates them on the fact that in spite of increased expenditure on all the principal benefits and prolonged and costly disputes, they have paid their way without drawing upon the reserve fund, which at the close of the year amounted to £204,089 7s. 9d. In fact, on the year's operations they were able to add a small sum to that amount, their receipts being £158,492 0s. 4d., and their disbursements £154,933 5s. 9d., or a gain of £3,558 14s. 6d. Apart from this financial aspect, progress has been fairly maintained in respect to opening new branches and the admission of members, the number of branches being 28, and in membership 42. On unemployed benefit there has been expended during the year £30,207, sick benefit £35,647, superannuation £18,605, total benefit £84,460, towards £69,233 a total of £153,693. The expenditure on each of those benefits showed an excess on the previous year, the total increase amounting to £21,135. The amount required to meet their claims for accidents was £3,340, this being £155 less than the previous year. Trade privileges had absorbed £26,687, and trade management £3,974, or a total of £30,661, this being an increase on the previous year of no less than £1,000, and exceeding in the amount expended under these headings any two years of the society's operations.

BRADFORD.—The news that the master masons of Leeds had agreed to advance their men 4d. per hour, while they are attempting to secure a reduction of 1d. per hour, has come as a disappointing surprise to the Bradford Employers' Association. The Bradford Masters' Emergency Committee have issued a statement that the joiners who were employed were working under the new wages and new rules. The master joiners have offered to allow the men to go to work at once at 8d. per hour, and to submit all questions of alterations of rules to arbitration. As to these alterations of rules, the men desire it to be stated that unionists and non-unionists have always worked peacefully together in the past, and, therefore, there is no need for a hard-and-fast rule that they should do so in the future.

DARLINGTON.—A meeting of the bricklayers who struck was held on Friday to consider the proposal of the employers to give a guarantee of 9d. per hour for two years. It was resolved to accept the proposal. Work was recommenced on Monday.

LEEDS.—The stonemasons of Leeds and district have obtained an advance of a halfpenny per hour—viz., 9d. to 9½d. This alteration commenced on the 1st inst.

LEIGH, LANCs.—About 100 men employed in various sections of the building trade at Leigh have struck work for a wages advance and improved conditions of labour. The plasterers ask for an advance of from 9d. to 10d. per hour and alterations of working rules, and the painters desire an increase of from 8d. to 8½d. per hour and similar rule alterations. The Master Builders' Association urged the workmen to give up the agitation owing to the slack state of the trade, but the men remain firm in their demand.

NUNEATON.—The members of the Nuneaton branch of the Amalgamated Society of Carpenters and Joiners, who are out on strike, have offered to withdraw their notices for an increase of 4d. per hour on condition that the masters withdraw their notice of reduction of a similar sum, and treat with the men as regards certain proposed amendments of the rules.

PERTH.—Owing to the slackness in the building trade, the master builders in Perth recently intimated to the men that after this month their wages would be reduced by 1d. per hour. Up to the present no reply has been received from the men.

TYLDESLEY.—At a joint conference of the master painters of Tyldesley and representatives of the local branch of the House and Ship Painters' Society, the employers have agreed to grant the additional halfpenny per hour demanded by the men, and the dispute is now settled.

WAKEFIELD.—The operative painters have asked that their wages should be advanced from 7½d. to 8d. per hour, but the employers have declined to accede to their request, consequently the men have come out on strike, an alteration of rules being also asked for.

CHIPS.

A panel, the tenth of a series intended for the mural decoration of the ambulatory of the Royal Exchange, is now being prepared for the reception of Mr. Frank Brangwin's picture of "Modern Commerce." This is a companion design to the "Ancient Commerce" of the late Lord Leighton, and is the gift of Mr. Thomas Lane Devitt. The Skinners' and Merchant Taylors' Companies have commissioned Mr. Edwin A. Abbey, R.A., to paint a picture commemorating the founding of their annual feast on the eve of St. John's Day, June 24. This will be placed in its niche in the course of the year.

The erection of public baths has commenced at Elland. They are to cost £6,000, and are being built on South House Estate, adjoining the district council offices. The baths are to be Elland's memorial to the late Queen Victoria's Diamond Jubilee.

The Local Government Board has sanctioned a scheme for extensive alterations and additions to the Holywell Workhouse, which will involve an expenditure of £4,000. The principal addition is the provision of a new building—to be erected on a site adjoining the workhouse chapel—in which there will be a spacious board-room and offices, to replace the present inadequate and antiquated accommodation. The alterations in the workhouse main building are designed to meet the new classification scheme. Outside iron staircases are also to be constructed for use in case of fire.

On Saturday the foundation-stones of a new Wesleyan Chapel at Lintz Colliery, in the Gateshead circuit, were laid. A site for the building was given by the owners of the colliery. The cost is estimated at £800, and the contractors are Messrs. A. and R. Davis, of Burnopfield.

The Salford Town Council have ratified the decision of the general purposes committee with regard to the price to be paid by the corporation for the tramcars, horses, and other plant of the company at the various depots in the borough belonging to the Manchester Carriage and Tramways Co. This amount was stated to be £42,500. The tramways passed under municipal control on Monday.

HAYWARD'S Patent "SEMI-PRISM"
L.A.M.E.N. 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 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LIST OF COMPETITIONS OPEN.

London County Council, Works Department, 10, Abchurch Lane, London, E.C. 4.	2,000,000, two best reports	Andrew Cameron, Solicitor, New Mills, N.B.	May 16
London County Council, Works Department, 10, Abchurch Lane, London, E.C. 4.	Not specified, 2,000,000, commission	T. Llanwarne, Clerk, St. John-street, Hereford	" 17
London County Council, Works Department, 10, Abchurch Lane, London, E.C. 4.	Not specified, 2,000,000, commission	Northampton, Clerk, Station-road, Aldershot	" 27
London County Council, Works Department, 10, Abchurch Lane, London, E.C. 4.	Not specified, 2,000,000, commission	W. H. Graves, Town Surveyor, Town Hall, Buxton	June 8
London County Council, Works Department, 10, Abchurch Lane, London, E.C. 4.	Not specified, 2,000,000, commission	John Enwright, Clerk, Ennis District Lunatic Asylum, Co. Clare	" 10
London County Council, Works Department, 10, Abchurch Lane, London, E.C. 4.	Not specified, 2,000,000, commission	W. J. Mann, Clerk, Union-street, Trowbridge	" 24
London County Council, Works Department, 10, Abchurch Lane, London, E.C. 4.	Not specified, 2,000,000, commission	John Parker, City Engineer, Hereford	" 30
London County Council, Works Department, 10, Abchurch Lane, London, E.C. 4.	Not specified, 2,000,000, commission	The Town Clerk, Town Hall, Manchester	July 31
London County Council, Works Department, 10, Abchurch Lane, London, E.C. 4.	Not specified, 2,000,000, commission	H. G. Stevenson, Town Clerk, Darlington	" "
London County Council, Works Department, 10, Abchurch Lane, London, E.C. 4.	Not specified, 2,000,000, commission	E. T. Atkinson, Clerk, 8, Waterloo-road, New Brompton	" "
London County Council, Works Department, 10, Abchurch Lane, London, E.C. 4.	Not specified, 2,000,000, commission	T. C. Smith, Clerk to School Board, Berwick-upon-Tweed	" "
London County Council, Works Department, 10, Abchurch Lane, London, E.C. 4.	Not specified, 2,000,000, commission	G. Cosgrove, Solicitor, New Southgate, N.	" "
London County Council, Works Department, 10, Abchurch Lane, London, E.C. 4.	Not specified, 2,000,000, commission	The Borough Engineer, Town Hall, Salford	" "

LIST OF TENDERS OPEN.

BUILDINGS.

Barnet Corporation	W. H. Stanley, A.M.I.C.E., Market Chambers, Trowbridge	May 11
Grammar School Governors	Oliver Caldwell, F.R.I.B.A., Penzance	" 11
London County Council	T. Hillier-Pyke, Architect, 61, Prestbury-road, East Ham, Essex	" 11
London County Council	The Royal Engineer's Office, Cork Barracks	" 11
London County Council	M. A. Robinson, M.R.I.A.E., M.S.L., Richmond-street, Londonderry	" 11
London County Council	Robert Monahan, Clerk, Tintern	" 11
London County Council	Edmund and Basky, Architects, Pontefract	" 11
London County Council	Henry Clutter, Queen-street, Goldsmithy	" 11
London County Council	E. C. Sallis, Surveyor, Witham	" 11
London County Council	Thompson and Dunn, Architects, 5, St. Nicholas Buildings, Newcastle	" 11
London County Council	G. P. K. Young, A.R.I.B.A., 12, Tavistock, Perth	" 11
London County Council	Herb. Tilson, Architect, Railway-road, Lynn	" 11
London County Council	Sampson, Hill, Architect, Redruth	" 11
London County Council	E. M. Bruce Vanham, F.R.I.B.A., Cardiff	" 11
London County Council	Louis Turley, Architect, 17, Laurence-street, Drogheda	" 11
London County Council	Barber, Hopkinson & Co., Architects, Craven Bank Chambers, Keighley	" 11
London County Council	Henry Laid, Architect, 12, Denzinger, Manchester	" 11
London County Council	Henry Litter, Architect, County Offices, Preston	" 11
London County Council	J. B. Bailey and Son, Architects, 3, Scott-street, Keighley	" 11
London County Council	R. W. Wells, Surveyor, Urban Council Offices, East Grinstead	" 11
London County Council	E. Kirby, Architect, 5, Cook-street, Liverpool	" 11
London County Council	F. R. N. Howell, A.R.I.B.A., 77, Tyne-street, North Shields	" 11
London County Council	Wm. Swift, Architect, 1, Finesse-street, Tunno	" 11
London County Council	Robert English, Schoolmaster, Tipperary	" 11
London County Council	R. Armitage and W. G. Smithson, Architects, Bingley	" 11
London County Council	J. Armitage, Clerk, Town Hall, Cleckheaton	" 11
London County Council	E. H. Harbottle, F.R.I.B.A., Architect, County Chambers, Exeter	" 11
London County Council	The Clerk, 33, Bath-street, Abingdon	" 11
London County Council	W. Harpur, Borough Engineer, Town Hall, Cardiff	" 11
London County Council	J. Earnshaw, Architect, Bridlington Quay	" 11
London County Council	A. J. Henderson, A.M.I.C.E., Eng., Portsmouth-road, Thame, Ditton	" 11
London County Council	Grassie and Pennington, Architects, Pontefract	" 11
London County Council	Rev. J. Rowlands, Cysegr Chapel House, Bethel, Carnarvon	" 11
London County Council	Lansell and Harrison, Architects, 38, Bow-lane, Cheapside, E.C.	" 11
London County Council	G. Gordon Hoskins, F.R.I.B.A., Darlington	" 11
London County Council	Stephen Shaw, F.R.I.B.A., Architect, Kendal	" 11
London County Council	The City Surveyor, Town Hall, Manchester	" 11
London County Council	T. Evans, Architect, Market Buildings, Craven Arms, Bucknell	" 11
London County Council	James Lord, C.E., Borough Engineer, Town Hall, Halifax	" 11
London County Council	William Bell, Architect, York	" 11
London County Council	A. E. Bond, Broad-street, Welshpool	" 11
London County Council	H. T. Hale, F.R.I.B.A., 13, Hart-street, Bloomsbury, W.C.	" 11
London County Council	C. Edgar Lewis, Clerk, Brentwood	" 11
London County Council	Frank Harrison, Clerk, St. Peter's-close, Wolverhampton	" 11
London County Council	Wm. Chapman Field, Borough Architect, Town Hall, Eastbourne	" 11
London County Council	William Birrell, Architect, Cupar	" 11
London County Council	F. Smith, Architect, M.S.A., Bank Chambers, New Brompton	" 11
London County Council	T. Roderick, Architect, 50, Glebeland, Merthyr Tydfil	" 11
London County Council	John Harding and Sons, Architects, 58, High-street, Salisbury	" 11
London County Council	S. D. Robin, Architect, 110, Pilgrim-street, Newcastle-upon-Tyne	" 11
London County Council	A. and W. Reid and Wittet, Architects, Elgin	" 11
London County Council	Jas. Whelan, Architect, Celbridge, Ireland	" 11
London County Council	Joseph A. Ferguson, Cumwhitton	" 11
London County Council	J. Griffiths, F.S.I., Architect, Falcon Chambers, Llanelli	" 11
London County Council	Samuel Rea, Clerk, Downpatrick	" 11
London County Council	T. B. Farrington, Architect, Trinity-square, Llandudno	" 11
London County Council	J. R. Rhind, Architect, Inverness	" 11
London County Council	Geo. E. Halliday, F.R.I.B.A., Architect, Cardiff	" 11
London County Council	John Craigen, Solicitor, 193, Union-street, Aberdeen	" 11
London County Council	Lansdowne and Grigg, Architects, Newport, Mon.	" 11
London County Council	E. W. M. Corbett, Architect, Castle-street, Cardiff	" 11
London County Council	J. Llewellyn Smith and Davies, Architects, Aberdare	" 11
London County Council	H. H. Aiken, J.P., Pettigo	" 11
London County Council	J. W. Sturt, F.S.I., Architect, Colchester	" 11
London County Council	William Burk, Architect, Hordsham	" 11
London County Council	R. B. Franklin, Architect, 21, Market Hill, Luton	" 11
London County Council	E. W. M. Corbett, Architect, Castle-street, Cardiff	" 11
London County Council	Waring and Nicholson, Architects, 58, High-street, Salisbury	" 11
London County Council	O. Robyns Owen, Solicitor, Pwllheli	" 11
London County Council	W. R. Bryden, F.R.I.B.A., Architect, 1, George-street, Buxton	" 11
London County Council	A. Ramsell, Architect, 187, Wolverhampton-street, Dudley	" 11
London County Council	James S. Cowley, Architect, Pymme-an-ow	" 11
London County Council	Henry C. Marks, A.M.I.C.E., City Eng., 36, Fisher-street, Carlisle	" 11
London County Council	E. J. Lovegrove, Engineer, Southwood-lane, Highgate, N.	" 11
London County Council	The Llanerch Gas Offices, Hordsham	" 11
London County Council	T. Duncombe Mann, Clerk, Embankment, E.C.	" 11
London County Council	R. Horsfall and Son, 22A, Commercial-street, Halifax	" 11
London County Council	Anthony Scott, M.S.A., 16, William-street, Drogheda	" 11
London County Council	Aldwinckle & Son, Architects, 20, Denman-st., London Bridge, S.E.	" 11
London County Council	R. Horsfall and Son, 22A, Commercial-street, Halifax	" 11
London County Council	Leeming and Leeming, F.R.I.B.A., 117, Victoria-street, S.W.	" 11
London County Council	W. A. Longmore, F.R.I.B.A., Architect, Walthamstow	" 11
London County Council	Medley Hall, M.S.A., Architect, Halifax	" 11
London County Council	O. Claude Robson, M.I.C.E., Public Offices, Dyne-road, Kilburn	" 11
London County Council	T. L. Horsfall and Son, Architects, Lord-st. Chambers, Halifax	" 11
London County Council	The Commercial Department of the Foreign Office, Whitehall, S.W.	" 11
London County Council	W. Hope and J. C. Maxwell, Architects, Trinity Buildings, Newcastle	" 11
London County Council	G. D. Stevenson, Architect, 13 and 14, King-street, E.C.	" 11
London County Council	J. C. G. R. S., Architect, St. Thomas's Chambers, North	" 11
London County Council	Kincaid, Waller, and Manville, Engs., 29, Great George-street, S.W.	" 11
London County Council	W. Laurence Bradley, Surveyor, Tonbridge Castle	" 11
London County Council	G. D. Stevenson, Architect, 13 and 14, King-street, E.C.	" 11
London County Council	J. Jameson Green, Architect, 19, South John-street, Liverpool	" 11
London County Council	J. Robinson Smith, Clerk, School Board Offices, West Hartlepool	" 11
London County Council	M. H. Medland, F.R.I.B.A., 13, Chamber-street, Gloucester	June 3
London County Council	N. Son F. Dennis, A.M.I.C.E., Surveyor, Aldershot	" 4
London County Council	W. J. Tudworth, Engineer, York	" 5

THE BUILDING NEWS

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TECHNICAL SKILL AND THE ARTISTIC INSTINCT.

TECHNICAL execution and skill have not generally been identified with art of a high order. Wherever we see a finely executed piece of workmanship there is, generally speaking, a deficiency in some intellectual qualities, or a want of proportion between the labour and effort and the actual attainment. We see, perhaps, a great display of technical skill with very little result or return. In building very ingenious construction is sometime thrown away completely by overlooking the aim that ought to have been kept in view. It is so much labour spent without an adequate return. We often see an immense amount of moulded and carved work in the fronts of buildings that is so much skill absolutely wasted without any effect; an interior with an elaborate scheme of ornament quite misplaced, as if the joiner, plasterer, and modeller tried to vie with each other in exhibiting their executive skill, and all the devices of their crafts. Those who frequent our technological and building exhibitions have clear evidence of this fact, for have we not often seen the most skilful arrangements and the most perfect execution accompanied by a neglect of artistic discernment and instinct? Most complicated designs are exhibited for moulded and cast brick, for terracotta faience and tile work. The plastic decorations for ceilings and walls are frequently so elaborate in pattern that the effect of relief is lost, the idea being to crowd as much ornament in a given space as possible. And then look at the exuberant style adopted for ornamental woodwork, and for iron and metal goods, notably firegrates and chimneypieces, door furniture, &c., as if the intention of the manufacturer was to exhibit as much labour as he could at the price. It is needless to say that all this is a vital error, a conception of work that is mischievous. The use of machinery has largely fostered the idea of elaborate workmanship; in casting and moulding it is just as easy and cheap to run through the machines elaborate as simple designs. Machine stamping and embossing encourages the production of ornamental replicas, and the use of labour-saving machines in joinery has covered our modern woodwork with cheap mouldings, impressed patterns to imitate carving, and introduced a display of lathe-turned devices, balusters, and fret-sawn ornaments. Uninspired and unintelligent labour is so much wasted energy; but almost worse than this is the cheap imitation of labour produced by the machine. It is this plethora of unintelligent workmanship that is to be regretted. Real thought-inspired workmanship is another thing altogether, and it is with the intention of trying to discover and reveal this difference that our present observations must be accepted.

What we may call a mere display of workmanship, if we can dignify by that name the ostensible substitution of pretence for real thoughtful work, appears in many of the products of our present-day exhibitions. Every trade is addicted to it. It pays, and that is the main thing. American production is full of it, for the American manufacturer relies mainly on machine-made goods, and is endeavouring to undersell in price our British industries. In building, too, the American is beginning to show how to convert the material to the best advantage, to construct in steel and concrete, also to introduce new and untried materials in a variety of ways.

The modern exhibition, with all its restrictions, is an educational agency. To begin with a few of the manufactures we meet with, we shall see how this glamour of workmanship is beginning to be felt. Even in clay products like brick and terracotta there is the desire to obtrude the mechanical means of manufacture—to exhibit labour and workmanship in various ways. Many of these are excellent and ingenious, as in many of the improved sanitary pipe-joints, to prevent leakage and preserve a continuous invert; or those clever arrangements and inventions for interlocking tiles together, so as to preserve a watertight surface of roof or wall; the patented modes shown of constructing hollow walls and linings, with interlocked joints; but in others the enthusiasm or zeal of invention has carried a patentee to excessive efforts in these directions, to invent a complex arrangement or joint of greater ingenuity than practical use, and in this way the main object intended is defeated. Thus the principle of interlocking tiles or bricks in certain positions is a good one; but it may become absurdly intricate and out of place in ordinary building. The ingenuity of the joint is hidden in construction, and it may become positively objectionable on account of the liability to break or fracture. The architect wants the simplest means of securing protection, such as an overlap or a rebated joint; but the ingenious inventor tries to force upon him a complicated plan for the sake of a neater or more finished joint. In the more decorative branches of the same manufacture, this glamour of labour, so to speak, is forced upon his attention by very elaborately ornamented brick or terracotta work, suitable perhaps for metal and fine plastic substances, but not adapted for moulded brickwork, unless the latter is carved. No doubt the desire has been to imitate carved brickwork in these productions by high-relief ornament, forgetting the treatment applicable to burnt clay. As the shaping of the clay is done by forcing it into a mould, it is contradictory to the nature of such moulding or stamping in plaster moulds, and the operations of drying and burning, to give such material the relief or fineness of impression that belongs to carving stone, as the latter processes all tend to impair the sharpness of the mould. Nor is this elaborate kind of ornamentation found in the best work of Belgium and Holland, both brick countries. In the terracotta manufacture, while it has wonderfully improved in all technical qualities, we notice the same tendency. The machinery has been made more perfect, the clays are carefully prepared, and pieces perfectly true can be produced; but all this accuracy in producing has been to some extent employed in making details to imitate carved stonework, and in ornamentation of an elaborate kind, or in producing Corinthian capitals, balustrades, panels, keystones, and other features of a sculpture-like character. There are few of our terracotta buildings that do not display this affectation of the modeller in reproducing stone-carving in high relief. Terracotta panels, pilasters, and capitals are turned out that vie with the most delicate wood-carving. But no one can say this is right. The architect too often mistakes this quality of finish and undercut expression as a merit, and the frequent delay in the execution of orders in this material obliges him to select some designs of the manufacturer that are in stock, perhaps a number of elaborately-modelled pilasters or panels or other details that are obtrusive and over-rich. An original design has to be modelled by an artist, and the processes of drying and firing all take time. In decorative faience or enamelled terracotta the regard for suitable design is subordinated to accuracy and finish—very excellent qualities, but which do not compensate for right motives and artistic principles. Look at so much of what we see in our

London saloons, cafés, and decorated buffets where faience has been used. It is over-exuberant: pilasters, capitals, panels, and friezes try to outbid each other in relief ornament of the most gorgeous kind. Decorative pottery applied in the form of panels of facing quarries has been overdone here and in Paris, where one sees cafés enriched with pilasters and panels formed of enamelled brick of the most *outré* description. Many of these decorative panels are in questionable taste, both in form and colour. Stoneware decorations have been also introduced in the ceramic decoration of buildings, and compete with terracotta. In decorated tiles, our improvements in machinery and processes have not done all they might have done. The ordinary Philistine admires the smooth and highly enamelled and intricate tile; he cannot appreciate the rougher designs of tiles without glaze which we find in many of the floors of our Middle Age churches, where small quarries of single colour, but of various shapes, are inlaid with terracotta of another colour.

Our manufacturers in plaster decorations for walls and ceilings have replaced the old modelling and handwork; but it is not clear that with all the greater exactness and finish of embossed or stamped ornamentation by our new methods we can show the results of old plaster decoration. There is here the same danger from mechanical repetition and technical excellence that we have to deplore in other trades. In metal and woodwork we see the greatest precision in production due to specialisation of trade and mechanical processes. We have neglected one quality in our modern metal-work, and that is texture. In forged metalwork texture is of great value, and one of the reasons why so much of our modern wrought-iron work looks feeble and flat in comparison with old work is often owing to this cause—that skilful handiwork and texture have been wanting. When the old smith wanted iron bars of various sizes and sections for ornamental ironwork, he worked with hammer on anvil, which produced bars of slightly varying size and form, nor were the surfaces perfectly smooth and even. They showed inequality of surface and modifications of form, light, and shade, the result of labour and care. The modern reproduction, with its ready-made sections and sizes of bars and rods turned out from the rolling machine, bought to order and bent to the form required at a cheaper rate, is infinitely less artistic because the labour of the smith has been reduced. Finish and smoothness are two highly-prized technical qualities, and in machinery, tool-making, instrument-making they are invaluable; but they are not those on which real art depends. How many people like to see large plates of sheet-glass, glazed brick and tile surfaces? There is just now a danger in mistaking certain qualities for art. These are two; but there are others: repetition, regularity, intricacy are all qualities that are found in our manufactures and workmanship. One looks at the exquisite regularity of make and pattern, another at the smoothness or delicacy of the finish; but very few trouble to inquire whether the work, whatever it is—whether a sanitary fitting, a piece of ironwork, or a decorative piece of plaster—is precisely adapted to the object, whether the motive or design is perfect. The appearance of colour which the above technical qualities imply is all that the ordinary purchaser or building owner cares for; but by such preference he is unconsciously doing an injustice to art.

PICTURES AT THE ROYAL ACADEMY.
—III.

IN Gallery V. Stanhope A. Forbes shows a touching figure subject (320). Round a cottage table are seated a group of country folk, listening with bated breath to an

January, 1901," painted with his accustomed

faces of the wife, daughter, and young son—

aspects of the "Modern Athens." In the first the city is seen under a sunny mist or veil

Monument, and other features of the pic-

harmony of blues and iridescent hues of the setting sun the irregular skyline. In the

sun pierces. We hardly see Mr. MacWhirter at his best in these views, though they are harmonious in colour, light, and shade.

"The Last Sleep of Madame Lamballe"

Henry L. Goddard shows this

stroke has been given; she lies peaceful as if

her bed is a small crucifix. At the half-open

door a figure of a man is seen stealing away,

probably her silent assassin. The scene

is pathetic, the composition and colour is

restrained and impressive. The large picture

by Geo. H. Boughton showing a recumbent

maiden clad in gauzy drapery on the sloping

meadow near a stream, covered by flowers,

entitled "Dreamland," is gracefully painted

subject, strong and forcible in light and

shade, is Florence A. Neumege's "Mother

William L. Wyllie's river scene, "The City

of London" (362), and especially his grand

are worth notice. George Clausen's "Sons

group of labourers hoeing in a field; in the

Energetic and strong is the drawing of the

men at their toil, and the rich tones of green

the waves lighted up by an evening sun,

while in the foreground, amidst deep cleft

rocks, men are seen hauling up wreckage,

while in the distance a disabled vessel is

discerned.

The large, ambitious picture, "The Birth

of Aphrodite," by G. S. Watson, is lack-

and mermaids are a little too demonstrative

and boisterous in their mirth at the rising of

the goddess. G. Sheridan Knowles' "The

Cloister and the World" (392) is a clever and

accomplished picture; the pleasure-seeking

groups on the seat are amusing themselves

as the ascetic in monastic garb passes to his

cloister.

Henry S. Tuke (396) has a delightful boat

scene, two boys in a punt throwing a line.

It is evening; the declining light is reflected

on the rippled surface of water, which forms

picturesque boat and figures. W. Q.

(377), an elderly gentleman in short shoot-

ing coat reclining on a rock in a High-

land landscape, is realistic. Sigismund

paints an Italian scene, with lady and

gentleman seated together, while the lady

tends over her companion to listen to the

voice of a man who is seated a little further on

the same seat in shadowy tones, thus trying

to realise the poet's lines—

One important picture in this gallery is

No. 417, "In Sight," a reminiscence of the

by Lucy Kemp-Welch. It is needless to say

this lady artist has drawn the horses and

riders with consummate skill; the struggling

horses plunging over the uneven, rocky

ground, are masterly, and there is dash and

movement shown in every touch. The other

picture that will attract attention for its many

charming technical qualities in the painting

of textures and armour is "The Accolade"

(434), by E. Blair Leighton, whose works of

historic genre have a fascination. The picture

represents a beautiful, fair Princess, whose

golden hair hangs in graceful tresses upon her

shoulders, standing before a rich throne in

the act of laying the sword on the shoulder

of a young scarlet-clad knight who kneels

before her. The scene is in a castle hall of

the 13th-century style; the light from a

painted window above the throne and the

open gateway on the right, crowded with

attendants and spectators, one of whom

carries the shield and spurs of the knight,

are most skilfully painted; but the delicacy

of the white-and-gold embroidered robe of the

princess and the chain armour of the knight

are consummate in drawing and technique.

G. E. Robertson is bold and dramatic in the

large subject picture "The Bard," though

perhaps a little stagey in parts. B. W.

Leader's fine picture, "An Old Southern

Part" (445) and "Our South Coast" (458),

are full of open-air effect and light. There

is a clever, rather quaint, allegory, by

Eleanor F. Brickdale, "The Deceitfulness of

Riches" (449). The artist is evidently of the

same school as Mr. Byam Shaw. We

notice a broadly-painted landscape by Alfred

Waterhouse, "At My Gate" (462), showing

that gentleman's ability as an oil-painter.

The picture by Arnesby Brown, "Morning,"

is a pleasing study of sunlit meadows, with

cows grazing. John R. Reid's "Ferryman"

(431) is vigorous in colour. John C. Adams'

landscape, "Call Us Not Weeds" (425),

must be mentioned before we pass to

Gallery VII.

Here Frederick Goodall has another large

picture, "A Mystery of the Past" (477),

representing the Sphinx and Pyramids, a

subject certainly powerfully impressive, and

painted with Mr. Goodall's resources; but

we pass to Leonard Skeats' "The New

Brother: Hospital of St. Cross" (494), a

large picture representing a cloister of the

old Winchester Hospital of St. Cross, with a

group of the brethren with their dark garbs,

wearing the badge, a white cross. Mr.

Skeats, who is quite a young painter, of

Southampton, must be complimented, and

has certainly achieved a success. The "new

brother" is shown being introduced to others

of the fraternity, and there is strength and

reserve in the painting. Stanhope A. Forbes's

"Good Bye: Off to Skibbereen" (495) is

powerfully composed. We see a boat with

two fisher-girls about leaving the Harbour.

The reflection of evening light on the water,

and the boats and hill beyond the harbour,

are painted with realistic truthfulness and

colour. Near it is a small but subtle allegory,

painted by Mary Hunter, called "Joy and

the Labourer" (497) in which the painter has

adroitly illustrated the lines of Jean Ingelow.

Joy, a pretty, happy little girl, is seated on

a bank, while an old man, with spade in his

Execution, '1793." The chief figure is a dandy of the period, who, in his elaborate dress, with indifferent demeanour, is walking out of a court. May F. Raphael's "Queen Guinevere at Amesbury" is a subject suggested from Tennyson's "Idylls of the King," and has much charm. We may also notice C. M. Q. Orchardson's large picture, "Memories," a feelingly-painted figure of a lady at the piano—the effect of candle-light being good.

David Murray, whose fine view of Windsor and other works in the last exhibition drew attention, contributes four English landscapes, in which he introduces streams and pools under different atmospheric conditions. "The Streamlet, Willow Wooded," depicts a large brook flowing between banks of verdure and silvery willows, in his own unsurpassed style. A punt, with a boy in it fishing, in the foreground shadows of the foliage, through which glints of sunlight flicker. Beyond is seen the open channel and distant horizon. "The River Plough" represents a plough used on the Test to clear a channel for navigation. The driver, standing in the water upon a sunken raft, is guiding the team of four horses with one boy rider, through thick tangled masses of flags. "Summer Storm" (531) is a verdant river scene. A sunlit river is seen in the middle distance; the foreground meadow is intercepted by a road leading to a ford, over which a flock of sheep crosses a footbridge. Beyond the river one sees fields and trees; a flash of lightning pierces the darkening clouds; the whole is painted with consummate handling, and a masterly study of storm-laden atmosphere. Another meadow scene, "Lush meadows of the Test" (912), is interesting in its brighter colouring of greens and russet tones.

Hubert von Herkomer has here a full-length seated portrait of "The Lord Provost of Dundee, Henry McGrady" (530), very gorgeous in its setting and dress. The ermine-trimmed red cloak, with the scarlet and gold-lace uniform visible beneath, are a trifle overpowering to other pictures in its proximity. We must also notice Adrian Stokes' clever view of "Trafalgar Square" (541) as seen on a typical grey London day, showing the Nelson Column and its base of lions, and the fountains.

In Gallery VIII., the chief picture is Herbert J. Draper's "Tristram and Iseult" (561), glanced at last week, in which we see the rude Celtic galleon with its semi-nude rowers. The lovers—King Marke's bride and Tristram—have partaken of the dread potion, "so that a great love entered into them, and departed not from them all the days of their life." There is, perhaps, a lack of the passion of the hero and heroine, and the grey tones of drapery are perhaps unfortunate in choice; yet there is much power in composition.

J. W. North has a delightful study of colour in "Earth's Children of the Quarry" (562); Yeend King a view of "The Priory, Christchurch" (557), Colin Hunter's long canvas, "Herring Fishers off Kildonan Castle, Isle of Arran" (579), which closes the vista of the main galleries, is very realistic in its light grey luminous sky and sea, as we see it from the earlier galleries. W. Dendy Sadler's amusing incident, "A Marriage by Registrar," is painted with all the fidelity and detail which this painter commands; the awkward and blushing bridegroom and bride standing before the registrar's table will appeal to many. Arthur C. Cooke's "The Engagement Ring," three young ladies seated in a large bay window before a tea-table, is clever in its light and tones.

A large historical subject by Chevalier Tayler, "Honi soit qui maly pense" (586), is one of the historical genre pictures in Gallery VIII., and is interesting as representing the incident of the origin of the Order of the Garter. It is a Court ball scene. Edward III. and Countess Salisbury

Albert Lee, Armstrong, Blunzwilke, Dragon-
Hartgate, York; James Gibbons, Dickson, Armstrong,
Benner, Grange, Fulwood, Sheffield, Yorks; William
Edmund Gough, Atkins, N. South-East in Agricultural
College, Wye, Kent; Frank Holman, Austin, B.D.,
Farm, Theydon Bois, Essex; Percival Henry Ashby
Bailey, The Straits, Dudley, Worcestershire; Harry
Brook, 37, Amptill-square, N.W.; John Brown, 21,
Rohill-street, Southampton; Leslie John Brown, Esq.,
other, Green Park, Salisbury, Wilts; Robert Leitch
Buckwell, Newington Rectory, Hythe, Kent; Thomas
Henry Bull, 29, Victoria Park-road, South Hackney,
N.E.; Frederick Bowden Buswell, 26, Benedict-road,
Brixton, S.W.; Charles Vincent Cobb, Beckenham, M.
Kenzie-road, Kent House, Beckenham, Kent; William
David Coghlan, Dunnington-road, Saxbury, G.
Chamberlain, Truro House, High-street, Brentwood
John Frederick Cocks, South-Eastern Agricultural Col-
lege, Wye, Kent; James Hatch Coles, Burgess Hall, Leeds,
Kent; Lane, Albert Ellis, 29, Southland, and South-
port, Lancs.; Harry Thomas Cooper, 36, Oakley-square,
N.W.; Hubert C. N. Heathcote, 1-st, Mickleham

The chapters on "Cost" and "Estimates" well-mentioned deal in detail with various questions of importance to the architect. Thus the approval of the architect of work performed can be proved by a production of the certificate, and no contention can afterwards be set up by the employer to the contrary. The remarks on certifying for payment

the whole work; or that portions are to be paid

cluded in a progress certificate; but the simplest way is to vest the property in such materials in the employer when delivered. The architect's

bind him to the approval of the entire work; it may develop defects, and therefore the contractor cannot claim any right before the approval is given of the complete work. Other sections, on the contractor's plan, penalties, the function of the architect as arbitrator between the parties, and the chapter on "extras" are very fully discussed in their several bearings under a contract, and ought to throw some light on the subject. The author has attempted, perhaps rather verbosely, to apply legal principles to the questions that arise, and to discover certain dis-

ought to be a guide in arriving at sound conclusions. The text would have been rendered more convenient for reference if marginal headings had been introduced. The profession will find Mr. Gregory's work to be a useful manual for reference in matters of arbitration between

A LITTLE OVER MONT CENIS THIRTY-SEVEN YEARS AGO.

By HARRY HEMS.

(Continued from page 653.)

England is the only great Power in the world (save and excepting her sailors)—when they find themselves in trouble or distress abroad. The Government representing almost every civilised country—save our own—have Government funds placed at their disposal, with which to help their own particular compatriots, when applied to, to do so. British Consuls are practically powerless to do this officially, although, out of the kindness of their hearts, they occasionally provide a little help from their own private purses.

The readiest place abroad to get home again from, if he finds himself "stone-broke." The plan is simplicity itself. Knock off the *chapeau* of the first gendarme that comes along, and, in due course, one finds oneself "run-in." The next morning, if unprovided with the necessary means

jection from the country as an "undesirable." So off you go by early train to Boulogne, in you upon the first steamer leaving for England. Upon the quay until the ship starts for the shores

Well do I recollect, when upon my homeward tramp from Tuscany, reaching Genoa, of which a very old Italian proverb says: "That it has without faith." On calling upon the British Consul there, he said, curtly: "Come to-morrow ship is lying in the Mole, who has lost his carpenter overboard. He's going up the Black Sea, and afterwards returns direct to England. You will probably be able to work your way home

"Not if I know it," was my thought, as I turned on my heel. "No going up the Black Sea in winter, and with no flannels or water-proofs either." However, I presented myself next morning, and was duly cross-examined by the skipper, who questioned me about caulking, and that sort of thing. Presently, turning to the Consul, he contemptuously remarked: "A blooming blither like that is no use to me." He was quite right in his reckoning up. I wasn't.

to their passports, and hearing a distressed fellow, in the place, had let him out. He, then, was corn in Egypt, so, with many grateful thanks, I

50 yards when a sudden thought apparently struck him, and he called out for me to come back. Then, glance I have never forgotten, he delivered himself thus: "Look here, young fellow, you've been very lucky to-day, but—" here he shook his finger, warningly, "don't try this little game again!"

It was on Dec. 6, 1864, that I arrived at Susa in Piedmont: tired enough, too, for between the journey and the weather, with the cold and the snow, and the long and tedious journey, the next day, without any idea, at starting, how long the journey would take, I crossed Mont Cenis. The following is what is recorded in my diary of that particular day's work:—

Wednesday, Dec. 7. There was a furious snow storm last evening. A number of mountaineers were playing at cards together in the common room, when suddenly they all fell on the floor, and, picking up, started stabbing one another with their knives. One man was killed right out, and several wounded. However, it was no business of mine, and after the body had been carried out, the good *ostessa*, quite unconcerned, sanded the floor where the blood was thickest. Everybody hereabouts takes me for a Spanish stonemason—I suppose because of the plaid comforter I wear. The *ostello* is called the *Albergo*, and living, as is usual hereabouts, is very cheap. I paid this morning for last night's dinner (macaroni soup, boiled mutton, bread, and a pint of wine) together with an excellent bed, 85 centimes (8d.). It was about half-past seven last night when I arrived. By daylight Susa looks a picturesque little place. However, I did not stop long about, for I had Mont Cenis to cross, so with an apple and some bread, and a good drink of goat's milk I started the ascent about 8 a.m. The sun was already quite hot and told upon the weight of my tools. The road all the way up is a zig-zag sort of 'diddle-diddle'—it turns and twists most vexatiously. There is little satisfaction after toiling up steep ascents for an hour or two, to find one's self only a few hundred yards above the last point, and, naturally, according to the map's plan, not an inch further on one's journey. On the right, as was said, is seen a perfectly flat plain far, far below, encircled by mountains, the highest of which seem of terrific height. A village nestles in the midst of this valley.

"As I went along, found much time and useless by following the tracks of the water-courses; so, by a bit of active climbing ever and anon, I made my way up the mountain. After a continuous ascent of some six or seven miles, the altitude is for many miles fairly level and direct. Hereabouts were passed two tunnels cut in the rock, both made at what looked like particularly early times, and evidently as a protection for travellers from drifts and avalanches. Up till now I had seen no snow; the scenery is emphatically *très-son*, and the quaint costumes of the few Piedmontese peasantry met now and again help the grouping of the pretty picture immensely. Suddenly, however, yea, almost at a jump, the aspect of all things changed. Instead of green pasturage and fertile mountain slopes, alive with herds of frisky goats and their *capriotes* browsing quietly, whilst long-bearded old Billies stood mute and solitary sentinels, with outstretched necks, upon the topmost point of some lichen-grown crag; snow came in evidence at every hand. The snow to-day (as I understand it is always for nine months in the year) is very deep, and walking awfully slippery. Locomotion is further much impeded to the

sleighs that run between France and Italy. These are constantly passing over the snow, and the road-maker)—just like so many long and never-ending slides. The scenery hereabouts is most striking. All around is practically the depth of winter, although only this time yesterday I was trudging perspiring through the vineyards of Lombardy. The various Alpine peaks around rise to a tremendous height. Everything is completely bare of vegetation, save here and there a solitary pine-tree, gaunt and stern, its foliage dark, grim, and wind-blown, stands out almost startlingly in the midst of the most dazzling white surroundings.

"It was very pleasant just hereabouts to be able to greet once again my old friends the telegraph wires. From Susa, they come direct across the plain of St. Nicolò, and then up the steep sides of the mountain—what a rough time the wire-men must have had to lay them! We are nearly up on the top of the pass now—although still higher peaks rise around. All along the road hereabouts, at short intervals, are refuges—the local folk call them 'hospices'—in which men, and even families, permanently reside. The occupants clear the snow as far as possible from the actual road, throwing it over the steep hillside; during storms, fog, &c., ring bells for the guidance of belated travellers. I counted these houses (they are much like those attached to toll-gates at home); there are 26 of them; went up some tremendous zig-zag galleries, the ascent of which upon a more or less (more than less) empty stomach, was very trying, for my tools were heavy, although, thank God, my heart is light enough, with my face homeward bound. Just about here I passed astride of thirty-eight mules, trotting contentedly along, one behind the other, all going in perfect order, and totally unaccompanied. Where they were off to, was a query, but it is to be assumed they were bound for Susa. It was just after reaching the summit of Cenis that the Italian barrier was reached. Thinking the house to be an inn, I entered, and found it occupied by a miserable-looking Italian official, enveloped in blankets, and with a rug thrown over his head. His face was much swollen with toothache. With a most unnatural grin, he languidly told me, his was 'no place of entertainment.' I thought so too, judging from internal appearances.

"Here is a large piece of table-land, maybe six or seven miles square; this crowns the top of the Pass. Here, too, are a few houses, at one of which I had a good hearty mid-day meal. It consisted of the hard white cheese of the country, which may be seen drying in birdcages by the door of every little house one passes; a sort of mummified polony, plenty of almost black bread, and a bottle of capital wine. All went down splendidly. I paid a demi-franc (fivepence) for the lot. On the opposite page is a recently-taken photograph of the group of mountain residences in question. All around are seen still higher glaciers—the cold is really terrible, and seems to pierce one through and through. Upon the south side of the road, and opposite to the hamlet illustrated, is a lake which, although deeply frozen, seems as clear as crystal, the constant high wind, blowing sobbing up aloft here, keeping any fallen snow from resting permanently upon the ice. This lake is declared to be bottomless. The fish, I was assured, caught in its water, are cyclops. Presently, met an old monk, foot-lane even here; where he came from or where he is going to is as much a mystery as was the long file of mules passed a few hours ago. The old monk was exceedingly friendly, and gave me a pinch of snuff and his blessing. Resuming my walk, at length came to the first French Refuge, situated just at the verge of the descent down into Savoy. Was glad to see here the familiar directing blue notice-iron, such as one meets with everywhere upon the roads throughout the whole length and breadth of France. It was just after passing this boundary (the space—some miles—between here and the last Italian hospice is practically No Man's Land) that I bargained for twenty centimes (2d.) with a couple of waggons in charge of a sleigh to give me a lift so far as Lans le Bœuf, a village situated many miles below, at the western foot of Mont Cenis. These sleighs are roughly composed of two sleepers laid parallel to one another, and kept apart about the width of a cart by cross-pieces. Upon these latter is rigged a framework to carry the merchandise, which is piled high up and fastened firmly and tightly by a couple of stiff ropes

running from front to back, tightened by a rule sort of windlass. The mules put their heads down the long winding narrow galleries at a tremendous rate, and the motion, perched on the top, although rather perilous, is easy and pleasant. The cold, however, was dreadful, and I was much annoyed to find that I could have been frost-bitten. My hardy mountaineer waggons did not seem to mind the cold at all. Well they might stand it, however, for with their great fur gloves (no fingers to them), booted up to their thighs, and wearing long stiff-headed cloaks, they both looked a cross between Arabs and Laplanders! Just before arriving at Lonsdale-Bong, we passed some peasants making a rough new way for us by the road, although for what object I could not learn. On arriving at the village, of which an illustration is given, I pointed out my way with my gun, and continued my journey, and away I went towards Termignon, but still cold, cold, cold, fired after the painfully cold ride, to be on my legs again. Eventide had, of course, long set in; but it was an exquisitely moonlight night, and the moonlight shone very brightly on Lonsdale-Bong and Termignon (about 3½ miles) was stupendously magnificent. Curiously, it was here that for the first time since leaving England I felt rather nervous. It was all on account of the wolves. I understood from the friendly waggons that some of these terrible animals were there. I think they called them—had been seen in the neighbourhood lately, and, indeed, with questionable appetite had devoured an old woman, whom they had attacked, whilst returning home alone from market. The neighbourhood was particularly lonely. I never met a soul between the two places, passed no houses, no anything, save a few deep ravines, at the bottom of which, in some places, I saw the little, brown, roundish, and cascades boiled galore. Further, at every turn there were almost perpendicular precipices, dark pine forests, and glimmering white snow. This snow appeared to reflect and re-reflect the moon's rays until all seemed light as day. The snow was so deep, and on the one hand and wild cruel-looking rocks on the other, and with nought in time of need to defend myself with, save a stout walking-stick bought for a few pence in Tottenham Court-road, W., six months before, it was at best a horrible thought to realise that there was even a remote chance of being eaten up, all but one's bones.

uncomfortable; but just then the sound of merry tinkling bells came pleasantly to my ears. It was the jingle of the diligence that connected Sivoz with Piedmont, and presently the latter passed, six in hand. Almost directly afterwards I arrived at Termignon. This was at 8 p.m., exactly twelve hours after leaving Susa.

Thursday, Dec. 8.—Termignon this morning appears to be in a particularly protected and sheltered position. It is situated hard by the base of Mont Cenis, the River Arc, by an immense curve, almost completely surrounding it, and making it nearly an island. I was naturally rather tired last night, after my up-and-down mountain walk yesterday, but the famous dinner I had at this *loggia pied* soon took away all remembrances of the day's fatigue. Prices here, as in Lonsdale, were very low, and I was when seen though the spectacles of a humble wayfarer like myself. For dinner I had two large bowls of soup, a bit of cold mutton, lots of mountain bread, and half a pint of wine, and a very good bottle of red wine, for 10 centimes only. So if I am a poor foreigner tramping somewhat painfully home to old England again, I am, happily, practically in clover, for—

Here then ends a leaf from an old diary. Suffice to add, after sundry adventures, I found myself—tools and all—once again in old England, just in time, too, to eat a happy Christmas dinner with "The Old Folks at Home."

HOW TO ESTIMATE, OR, THE ANALYSIS OF BUILDERS' PRICES. VII.

By JOHN T. REA, F.S.I., Surveyor, War Dept.

CONCRETE WORK.

IN estimating the quantity of materials required for concrete, it must be borne in mind that the size of the pieces of which the aggregate is composed, influences the content of the spaces or

interstices between them, and therefore the amount of the lime, cement, and sand, in the matrix to fill these up. The larger the stones the greater will be the voids between, and the more decrease of bulk will there be in the whole of the materials after mixing. This diminution may be as much as one-third, but with ordinary materials one-fifth may be taken as an average; a further slight compression of one-tenth takes place in laying and ramming. Such lessening of bulk must be taken into consideration in calculating the extra amount of materials required, and is best ascertained by actual trial; by filling a water-tight box with materials well wetted to avoid further absorption, and measuring the quantity of water it is necessary to pour in to fill up all the interstices. The cavities can be reduced by breaking the stones to as many different sizes as possible, which is very important if good concrete is to be produced, as the cement is intended to unite all the various portions, large and small, of the aggregate, and not to make a mortar simply to fill up the voids. Concrete should, in fact, contain as much broken material and as little mortar as possible, and stone-crushing machines produce more irregular fragments, and voids less than stones which are by hand, though the latter are sharper.

The following shows the amount of voids in stone broken to different sizes, and in other materials.

Stone broken to 2 in. cubes has 10 per cent. voids	10
Stone broken to 1½ in. cubes has 12 per cent. voids	12
Stone broken to 1 in. cubes has 14 per cent. voids	14
Stone broken to ¾ in. cubes has 16 per cent. voids	16
Clean shingle or clean gravel has 18 per cent. voids	18
Clean sand has 22 per cent. voids	22
Thames Ballast, which contains sand, has 4 ft. cube of voids per yard cube, or.....	16

Further, the shrinkage in bulk of the lime and sand, or cement and sand, as a result of mixing with water when made into the mortar or matrix, must also be considered. This diminution for lime and sand is usually ¼ (25 per cent.), and for cement and sand ⅓ (17 per cent.). The reduction varies according to the proportion and nature of the materials. For example, in the case of a deal of such information in relation to various materials, see "The Building Materials of the Construction," Vol. III., where other valuable information on aggregates and concrete generally will likewise be found. The writer has proved this reduction in concrete in the following manner:—A bottomless box measure, 5 ft. 6 in. by 2 ft. 6 in. by 1 ft. 6 in., 1 yard cube, was first filled with broken stone for cement. Portland cement and gravel with sand, mixed dry. This, after being taken out of the box, was twice turned over and wetted, filled back again, and well rammed, and was then found to have sunk 3½ in., or about one-fifth. Therefore, when this concrete was wetted and rammed, it was reduced one-fifth in bulk, or 20 per cent. Thus 12 measures of this-sized box made 10 yards cube of concrete.

Materials for concrete. These are ballast, broken stone, gravel, shingle, &c., for the aggregate; and lime, cement, and sand for the matrix.

How to estimate. From 10 gal. to 50 gal. of water are required in making one cubic yard of concrete, the quantity in each case depending upon the materials used and their proportions. The average quantity may be taken as 25 gal. The cost can be put down at 1d. per yard cube, which is the rate allowed by the East London Water Company; in the country it may be nil.

Labour for concrete. A labourer can mix, including measuring the materials and turning over twice dry and watering, 8 yards cube of concrete per day, or say one yard in 1½ hours, mixing only. And he can mix, wheel, deposit, and ram half that amount, or 4 yards cube per day, equivalent to one yard in 2½ hours. Some clerks of works assert that only 2 yards cube can be done per day, which includes, in addition to the foregoing, labourers getting water, ganger for supervision, &c., and laying complete. But this seems a low estimate, and much depends upon the driving power of the foreman.

Some examples of analysis of concrete will now be given:—

EXAMPLE 1. Concrete composed of 1 part Stone, 2 parts Portland Cement, and 6 parts Thames Ballast. This ballast contains the necessary sand, of which there is one-third, the rest being gravel. In practice 1½ cubic yards of ballast are allowed for each cubic yard of concrete, including waste, which will cover the

diminution of the sand in the ballast, a reduction that has already been given at one-fourth. A similar allowance must also be made for the diminution of bulk in the lime, plus one-sixth (or 16 per cent., as stated in the previous table) for the voids in the ballast, or say for adjustment by 1½ cubic yards of ballast for each cubic yard already apportioned, making 4 bushels in all. In this and other cases, the proportions of lime or cement and sand should be taken with reference to the bulk of the ballast or shingle before mixing, and not to that of the whole of the materials when added together.

	s.	d.
1 yard cube of concrete (100 cu. ft.)	10	0
1½ cubic yards of ballast (150 cu. ft.)	10	0
1 cubic yard of cement (27 cu. ft.)	10	0
1 cubic yard of sand (27 cu. ft.)	10	0
1 cubic yard of water (27 cu. ft.)	10	0
1 cubic yard of lime (27 cu. ft.)	10	0
1 cubic yard of gravel (27 cu. ft.)	10	0
1 cubic yard of shingle (27 cu. ft.)	10	0
1 cubic yard of stone (27 cu. ft.)	10	0
1 cubic yard of brick (27 cu. ft.)	10	0
1 cubic yard of rubble (27 cu. ft.)	10	0
1 cubic yard of mortar (27 cu. ft.)	10	0
1 cubic yard of concrete (27 cu. ft.)	10	0
1 cubic yard of ballast (27 cu. ft.)	10	0
1 cubic yard of cement (27 cu. ft.)	10	0
1 cubic yard of sand (27 cu. ft.)	10	0
1 cubic yard of water (27 cu. ft.)	10	0
1 cubic yard of lime (27 cu. ft.)	10	0
1 cubic yard of gravel (27 cu. ft.)	10	0
1 cubic yard of shingle (27 cu. ft.)	10	0
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within the circumference thus drawn the East End and most interesting suburbs exist, that are being rapidly destroyed for dreary houses and villas to the vast growing population. The parishes which include Bromley, Poplar, Limehouse, Stepney, Mile End, St. George's in the East, Shadwell, Bethnal Green, Spitalfields, Stoke Newington, Bethnal Green, Edmonton, Ponders End, &c., on the Middlesex side, and numerous districts like East and West Ham, Stratford, Plaistow, Upton Park, Forest Gate, Manor Park, Romford, &c., on the Essex side, were divided into districts and apportioned to members of the committee, who surveyed, made drawings and photographs, and filled in forms. These were sent to Mr. Ashbee for collating. The work before us, though only a fragment of what is contemplated, speaks for itself and for the great personal labour of the editor and his committee. The present volume treats of Bromley only: it has received the assistance of Mr. G. Laurence Gomme, F.S.A., then the Council's statistical officer, and recently promoted to be clerk. The volume before us registers or describes 16 objects or memorials. Six of these have been destroyed during the compilation; two others, it is said, are threatened. The old High-street, Bromley, has a very pleasing curvature, and consisted of many interesting old houses, many of timber, a few reproductions of washed sketches by F. C. Varley being given in the work. There are now few traces of the 17th and 18th-century houses with their tiled roofs and richly moulded timber cornices and traceries, according to the report. Other interesting old houses have disappeared, such as the Old Palace of James I., and the half-timber inn of the "Seven Stars" with its picturesque gables. The so-called "improvements" in this parish may be taken as a fair sample of the alterations and loss that is going on all over London. A list of old buildings and things threatened or destroyed during the last six years is given: it makes a sad and serious record of the remorseless and wanton tide of destruction for mere personal and commercial gains. The list is too long to be given here; but we mention the following buildings amongst those destroyed:—Stratford Place, the work of Robert Adam; the Rolls Chapel; the City churches of St. Michael, Wood-street, rebuilt by Wren, and pulled down in 1897—the lower part of tower was Medieval; St. Michael Bassishaw, rebuilt by Wren, destroyed also under the Uniform Reliquities Act; St. George, Betholph-lane; Old Palace and Tudor House, Bromley. The "Old Bell Inn," the last galleried Inn in London on the Middlesex side; Old Merchants' Houses, Austin Friars; 17th-century houses on south side of Barnard's Inn; Clement's Inn; Dick's Coffee House, 8, Fleet-street; Blackfriars Monastery, north side of Ireland Yard; 13th-century crypt, Laurence Pountney-hill; Cock Tavern, Fleet-street; Church-row, Aldgate; half-timber houses, Mile End and Whitechapel-road, and others. Many interesting old examples of Elizabethan and Jacobean date are recorded, including Fairmead Hall, High-street, Stratford; The Gables, Wandsworth Common; The Greyhound, West Ham. Of buildings threatened a long list is given. Often public bodies have been responsible for the destruction or safety of these buildings, such as the London County Council, the London School Board, Charity Commissioners, &c. As William Morris said, whenever a noble work of art was threatened, it was because "somebody wanted something." The report before us eloquently appeals to the historic conscience of the citizens of London and those in authority, and proposes means of safeguarding historic records. The committee refer to the housing of the poor, and they say very truly: "We find that for every slum destroyed in the centre, half-a-dozen are run up in the suburbs; we find that while the legislators are theorising and experimenting as to how the poor should be housed inside the county of London, the jerry builder is solving the problem for them outside, to the infinite loss and detriment of the community. We find estate after estate, park after park, coming under the hammer, the trees cut down, the roads stupidly planned, everything in short sacrificed to the financial exigencies of the few people immediately interested."

A few good suggestions are made in the introductory remarks. The combination between private and municipal enterprise, and between the various municipalities of greater London, assisted by the formation of a representative committee to aid in that purpose, is worthy of attention. Every case of impending destruction would be examined

and openly considered, and proper action taken. We believe also in the wisdom of seeking to enlist the interest of the Church and other religious bodies, the clubs, university settlements, and trade unions in the cause. The right course to adopt is not certainly or generally the utilitarian way, but that which will awaken the sympathy and historic interest, and a committee that will put itself in touch with all these agencies will be advantageous. The grievous destruction of open spaces is greatly depriving future generations of many localities which were formed and enjoyed by our ancestors.

But we pass on to notice a few of the objects or memorials noted of Bromley-by-Bow. The first mentioned is the church of St. Mary, of which nothing remains of the old edifice, originally the chapel of the church of St. Leonard's convent, except fragments of walls. The description of the old church is of interest. The monuments and tablets were preserved and placed in the new church, and some of these are fine examples of 17th century date, of coloured marbles, figures, heraldic and decorative treatment. These are described in detail, with their inscriptions. The historical and bibliographical notes and references are of value. In the churchyard, a very interesting one of the few remaining, are several Late 17th and 18th century monuments, chiefly of Huguenot families, with altar tombs and headstones, a few with good carving. The vicarage, Late 18th century, is also described. It contains a fine silver-gilt chalice and paten of 1617, and a Jacobean pulpit.

Bromley Hall, of Late Tudor, rectangular in plan, with corner turrets, described and illustrated by plan and view, is of interest. It has underground passages, said to lead to Boleyn Castle, Upton Park, or the Old Palace. Near it is the Manor House, Brunswick-road, which contains many old oak carvings of Early Renaissance style, and a painted ceiling over hall. Tudor House, St. Leonard's-street, is a very interesting structure of three periods—Elizabethan (late 16th century), William III., and Early 19th century date. It is a plain brick building, square in plan, tiled roof. Plans, elevations, and details, and perspective views are given, including sketch of porch, entrance railings, staircase, and old gateway. These reproductions are from wash sketches, and are characteristic of Late Renaissance. The Drapers' Almshouses, with the details of carved brackets to chapel doorway, form one of the series of recorded memorials. The almshouses formed three sides of a quadrangle and resembled the block of Trinity Hospital in Mile End-road; only a central block containing chapel remains. The wooden blocked cornice and pediment, carved brackets over doorway, with cherubs' heads, are very clever and artistic, and the fine-rubbed brickwork of front is a good specimen. We have noticed the account given of the Old Palace. Other memorials recorded are St. Andrew Mission Church, Gurley-street, and an interesting old house in Bromley Wharf, Three Mills-lane. The "Seven Stars" public-house at corner of St. Leonard-street, of timber construction, has been partially destroyed. The sites of all these buildings are coloured red in the large plan which accompanies the survey. As a record of historical buildings and memorials, this first volume will be received with welcome by architects, archaeologists, and all who wish to protect and preserve an inheritance of the past in Greater London.

BOOKS RECEIVED.

Practical Draughtsman's Handbook (London: Cassell and Co.) includes the gist of some articles by Professor Henry Adams which have appeared in a contemporary, together with others by the compiler, Mr. Paul N. Hasluck. It is well arranged and comprehensive, and is illustrated by nearly 250 diagrams and woodcuts.

The Surveyor's New and Correct and Precise Tables is published by the author, JOHN C. FERGUSON, M.Inst.C.E., and offers a solution of the centesimal division of the circle by a device in the form of a dial to be attached to magnetic compasses or surveying instruments in place of the ordinary dial, which is only divided into degrees. Half the circle is divided into degrees, and the other half divided into octants. Each octant is subdivided into 100 parts by drawing lines from the centre of the circle through the octant are to intersect 100 equal divisions of the tangent to the octant. The divisions on each octant are numbered from 1 to 100 in opposite directions, starting from their adjacent quad-

rantal radius, and the angles expressed by the divisions are always read from the quadrantal radius adjoining the octant upon which the reading is taken. The author gives many examples of the use of his surveying circle, and points out that any instrument provided with it is at once converted into a telemeter or range-finder, with which all problems in surveying can be solved arithmetically.—*The Essex Review*, under its new publishers (Chelmsford: Tindall and Jarrold), fully maintains the high character as a county quarterly gained under the management of its originator and first editor, the late Edmund Durrant. The issue before us contains an interesting illustrated article on "Essex Brasses," by Miller Christie and W. W. Porteous; a continuation of Miss Charlotte Fell Smith's account of the "Western Family of Rivenhall," both profusely and well illustrated, and many local notes and jottings. Mr. F. Chancellor, F.R.I.B.A., describes and shows by a drawing a plaster panel at Sheepcote Farm, Wittle Waltham, containing a falcon crowned and holding a sceptre, the badge of the luckless Queen Anne Boleyn. It is, however, dated 1638.

Engineering Estimates and Cost Accounts. By FRANCIS G. BURTON, A.S.A.A. Second edition (Manchester: The Technical Publishing Company, Ltd., 31, Whitworth-street).—This is one of the useful series of handbooks we have noticed at various times. Mr. Burton's little book will be found of great value to all engineers and accountants. The second part of the treatise on cost accounts appeared in *Engineering*, and is now reprinted, with the forms of account therein given. Mr. Burton observes what is true in all estimating, that the cost clerk must possess a detailed knowledge of the business so as to vary his forms of account to the difficulties that may arise. It is the "pettifogging uniformity of detail" that is condemned. The forms of estimates given, for instance, for a Lancashire boiler shows the necessity of finding the weight and quantity of material, and of determining the price. The estimate is ruled in four columns—namely, weight and quantity, price, material, salaries and wages. The cost of materials being added to salaries and wages, the estimator has to add for use of machinery and tools, management charges, rent, insurance, gas, water, and to obtain total estimated cost, and then to add profit. Gas-engines, &c., steamships, &c., are dealt with. The second part, on cost accounts, will be of much value to engineering firms. The forms of invoice book, the chapter on department accounts, depreciation, loose tools, and the forms of cost accounts for small works are useful. If all engineering firms consulted these rules, their tenders would be more current, and they would be gainers.

BRITISH AND IRISH BUILDING STONES.—XXIV.

(CATRANAVONSHIRE continued.)

THE average composition of Welsh roofing slate is given as: Silica 60.50, alumina 19.70, ferrous oxide 7.83, lime 1.12, magnesia 2.20, potash 3.18, soda 2.20, combined water 3.30. The colour of slates is due to the presence of iron oxides; in the Llanberis blue slate there is 5.68 per cent. of ferric oxide, and in the Penrhyn purple 6.54 per cent.; ferrous oxide is also present in both to the extent of not more than 0.8 per cent. The green spots are bleached—that is, they have lost much of their iron, and contain only about 1.5 per cent. of the oxide. Some specimens examined had none at all. The green colour on a blue or purple slate is therefore due to the removal of its iron altogether, or the partial conversion of ferric into ferrous oxide. The name "slate" should be limited to stratified rocks having true slaty cleavage as defined above; hence the name is improperly applied to Collyweston, Stonsfield, and other fissile sandy limestones which are cleft for roofing in slabs, the surfaces of which are always parallel to the planes of deposition. Joints in rock masses are fundamentally different from cleavage planes, for they are actual fissures, whilst the latter are surfaces of weakness, and not actual discontinuity. In the British Isles slaty cleavage is a characteristic of the older Palaeozoic formations from the Lower Cambrian to the Carboniferous; but in Europe and North America true slates are derived from rocks of the same age as our oolites, chalk, and London clay, so that cleavage is not confined to the rocks of any one geological period only. The best Welsh slates are split from $\frac{1}{8}$ to $\frac{1}{16}$ in. thick, or even less, the degree of thinness depending

the quarries. The nomenclature of these rocks is

of rubbings from sculptured monuments in the

County	Number to County Seat	Number to City Seat	Number to City and County Seats
Adams	16	72	88
Albany	14	56	70
Albany	1	27	28
Albany	16	84	100
Albany	14	84	98
Albany	14	98	112
Albany	14	112	126
Albany	11	138	149
Albany	12	142	154
Albany	10	170	180
Albany	10	192	202
Albany	8	214	222
Albany	8	242	250
Albany	10	262	272
Albany	8	286	294
Albany	12	319	331
Albany	10	354	364
Albany	8	378	386
Albany	10	388	398
Albany	7	412	419
Albany	6	434	440
Albany	5	456	461
Albany	4	478	482
Albany	3	492	495
Albany	2	516	518
Albany	1	538	539

W. Scott, Esq., son of which was shown at the Great Exhibition of 1883, and the present Exhibition of 1884. The building was erected by the late Mr. W. Scott, Esq., and was destroyed by fire in 1887. The process by which the building was destroyed was known only to himself.

Building Intelligence.

THE CENTRAL SCHOOL OF ARTS AND CRAFTS.—The Technical Education Board of the London County Council will shortly submit for the approval of the Council a scheme for providing a site for the erection of new buildings, also a permanent home for the Central School of Arts and Crafts, at present existing at the Roper's street, certain premises acquired by the Council in connection with the Southampton-row widening at the corner of Orange-street and Southampton-row. It is also intended that accommodation should be found on the site for the London County Council School of Photo-Engraving and Lithography in the event of that school being unable to continue the tenancy of its present premises. The cost of the site is stated to be £45,000, which sum it is proposed shall be borrowed under the authority of the Technical Instruction Acts.

MORBORNE. The parish church of All Saints, Morborne, about seven miles from Peterborough, which till recently bore the reputation of being the most dilapidated fabric in England, is undergoing restoration at a cost of £2,200. It has been found necessary to underpin nearly the whole of the building. The nave, aisles, and the transepts have been partly rebuilt. The chancel, which contains sculptured and painted figures, is being entirely reroofed in oak. The Norman columns of the nave have been underpinned and new bases inserted, whilst the Early English arches with which they are surmounted have been refaced and restored. The foundations of the curious red brick embattled tower have been reconstructed. During the underpinning of the west wall of the nave the discovery was made of a small portion of a Roman ecclesiastical dignity. The stone, which measures 6ft. 11in. in length, was found over 4ft. below the floor of the nave. It has been re-erected on a base in the south-west corner of the south aisle. The work of restoration, which include reseating in pitch-pine, are being carried out by Messrs. John Thompson and Sons, of Peterborough.

MORNINGTON, PEMBROKE. The delicate and lovely look place of a new chancel in St. Matthew's Rectory Church. The chancel is of rectangular shape, externally simple in design and in that harmony with the rest of the building. In the gable is a window of four lancet lights, comprised within a moulded pointed arch, the upper part of which is treated with cusp vesica and quatrefoil openings. The roof is vaulted in timber, the walls panelled in oak, and the floor laid with coloured marble. The memorial window contains the figures of the four writers of the Gospels.

PLYMOUTH.—The well-known Citadel is being transformed by the addition of new buildings with a wall of red brickwork, with a wall of about £46,000. Just within the gate designed by Sir Christopher Wren, which overlooks the town, is being built a new building, and a new building is being built on the other side of the town. The demolition of the inner ramparts entailed for the erection of the new recreation and soldiers' block affects the least interesting portion of the fortress, and the elevation has been so designed to disturb as little as possible the appearance of the old work. The massive granite plinth and string-course are rebuilt in the new work at their original level, and thus preserves the continuity of long low lines which is characteristic of the Citadel. The walls are built of local limestone, with Portland stone dressings, a 3-in. cavity and a lining of 9-in. brickwork, the substantial walls providing depth of reveal for windows and doorways. In the centre of the quadrangle has been placed the old statue of George II., which has been removed from the site of the new officers' mess. The statue was erected in 1728, at the expense of Captain Louis DuRoi, and is the work of an artist named Robert Pitt. The centre portion of the eastern elevation bears a carving of the Royal Arms in the pediment, executed in Portland stone. The wings of the block, which form the quadrangle, each contain accommodation for thirty men, offices, and bath and cook-houses.

The tail ends of both wings are only about half the elevation of the main buildings. In proximity to the northern wing of the soldiers' block is the canteen and recreation-room. The architect who has suggested and designed all the Citadel additions and improvements is Mr. T. Rogers Kittell, F.R.I.B.A. Immediately outside the northern rampart of the Citadel, on ground granted by the Corporation, it is proposed to erect headquarters for the 1st Devonshire Volunteer Artillery, W.D.G.A. The covered drill-shed will be about 120ft. by 60ft., and the armoury 30ft. by 20ft. There will be spacious rooms for all ranks, coffee-bars, an orderly room, adjutant's office, lobby, store, and caretaker's premises. The frontage will probably be of local limestone, with Portland stone dressings.

NEWCASTLE. The Wesleyan Church at the Holy House site, at the junction of the Tunstall and Durham-roads, was laid on Friday. The new church will be Gothic in character, and will be 70ft. long by 41ft. wide across the nave, and 65ft. wide across the transepts, with a gallery in the transepts and down the sides and across the ends. It will seat 800 persons. The spire will be 104ft. in height. The building is faced with Palley Bridge stone and Northumberland stone dressings. The school is 50ft. by 41ft., with a gallery on three sides. The gallery can be divided into classrooms by means of revolving shutters. The school will accommodate 500 to 600 scholars. The estimated cost is about £15,000, including site. Mr. J. Jameson Green, Liverpool, is the architect; Mr. W. A. Lowery, Liverpool, clerk of works; and Mr. J. B. Scott, the contractor.

WINCHESTER CATHEDRAL.—With the £1,500 obtained last autumn by the sale to Mr. J. Pierpont Morgan of Benjamin West's painting removed from the high altar screen of the Cathedral, the Dean and Chapter are restoring the Lady-chapel. The north window has been filled with stained glass by Mr. C. E. Kempe, the pavement of the entire chapel has been renewed, while the sanctuary floor has been laid with polished Ashburton and Dove marble. The delicate 16th-century woodwork of the stalls has been repaired and cleaned. The fine kneeling figure of Bishop North, by Chantrey, which had been inconveniently placed on the east wall, has been removed, and refixed in the retro-choir, east of Bishop Waynflete's chantry. The existing reredos is hardly suitable for its surroundings, and its donors, the family of the late Dean Bramston, have consented to its removal when funds are forthcoming for the carved and coloured oak triptych which it is desired to place there. The whole of the work has been designed and carried out under the direction of Mr. C. E. Kempe, while the repairing of the woodwork has been intrusted to Mr. G. H. Kitchin.

CHIPS.

The Local Government Board have written to the Lambeth Guardians approving the plans for the new offices and nurses' home, but only on the understanding that the strictest economy will be exercised. The Local Government Board state that they expect the expenditure to be kept below the estimated total cost of £54,783.

Steps are being taken to erect a new mission church of the Good Shepherd in Spenshaw, Birmingham, to accommodate 300 worshippers, at an estimated cost of £800.

The foundation-stone of a new Baptist church at Waterhouses was laid last week. The building, which will be built of Penshaw red brick, will cost over £1,000, and will seat 350 persons. A Sunday-school will be provided on the upper floor.

The Emperor William has intrusted Herr Möbius, the German architect, with the restoration of the Castle of the Emperor Charles IV. at Tangermünde.

In the case of the application on behalf of David Henry Bacon, Merton-road and Alt-grove, St. George's-road, Wimbledon, S.W., builder and decorator, the order of discharge from bankruptcy has been suspended for two years, ending Jan. 11, 1903.

A scheme has been promulgated for the construction of a light railway from Elland to Southowam. Plans have been prepared by Messrs. Jackson and Son, of Halifax. It is claimed that the line would be of great service to Southowam stone trade, and to the numerous brickworks in the vicinity. It is estimated that the total cost would be from £30,000 to £40,000, only about half the estimated cost of a previous proposal to construct a line from Holmfild Station to Southowam.

TO CORRESPONDENTS.

When sending articles for publication, please to send them to the Editor, The Building News, 11, Abchurch-lane, London, E.C. 4. When sending articles for publication, please to send them to the Editor, The Building News, 11, Abchurch-lane, London, E.C. 4. When sending articles for publication, please to send them to the Editor, The Building News, 11, Abchurch-lane, London, E.C. 4.

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Advertisements for the current week must reach the office not later than 4 p.m. on Thursday. For out-of-town Advertisements and alterations in serial Advertisements must reach the office by Tuesday morning to ensure insertion.

SITUATIONS.

The charge for advertisements in "Situations Vacant" or "Situations Wanted" is 10s. per line. For a long advertisement, 10s. per line. For a long advertisement, 10s. per line.

RECEIVED.—W. E. P.—D. H. R. and Son.—L. L.—M. T.—D. N. H. Sheddell & Co. Ltd.

In London and the South of England brickwork is measured by the rod superficial of 272 1/2 sq. ft. Multiply this superficial by the number of half-bricks it is thick, which will bring it into half-brick work, and divide by 3 to bring it into brick-and-a-half work. Lastly, divide this by 272, which will give the price. Thus, the price 3ft. on face by 14in. will have to be measured simply by the height of the openings; the 18in. square piers are to be added, each being taken as 1ft. 6in. by the height, multiplied by 4 for the half-bricks it is thick, and divide by 3. The result must be multiplied by number of piers. But in Manchester and Lancashire the work is reduced to one-brick thickness, and the whole yards superficial, so that the part of pier 14in. thick must be multiplied by 3 and divided by 2 to bring it into one-brick work. For the projecting piers, as they are 18in. square, multiply by 2 to bring them into one-brick thickness; then bring the whole superficial of one-brick thick into yards superficial by dividing by 9.

Correspondence.

NEW CONDITION TEST FOR PORTLAND CEMENT.

To the Editor of the Building News.

SIR, In answer to the inquiry by Mr. Billson in last week's issue, I may say that into the chemical reactions of the process it was not thought necessary to enter, as the communication was not given for analytical purposes, but as an economical and easily-applied test, to enable architects, engineers, and superintendents in charge at once to find out if, on delivery, a cement

WATER SUPPLY AND SANITARY MATTERS.

CHIPS.

A fire occurred at the house of Mr. Ansell, in
the city of Washington, on Monday morning. The
cause of the fire was a lamp, which had been
left burning, and the fire spread rapidly, and
the house was destroyed. The house was
destroyed.

The architectural part is of marble.

The Engineer-in-Chief of Public Works for the Department of the Nord has submitted to the municipalities of Lille, Roubaix, and Tourcoing—three of the most important manufacturing towns of France, lying close to one another—a scheme for connecting the three towns by a broad avenue over six miles long, a Champs Elysées on an American scale, with a line of electric trams and a cycling track along it. The new boulevard will, if constructed, cost £2,500,000.

The work of removing the pictures from the Great Hall at Christ's Hospital is in progress. The enormous picture painted by Antonio Vario between 1684 and 1690, "to commemorate the foundation and endowment with the Hospital of the Royal Mathematical Scholarship by his Majesty King Charles II. in 1673 and 1675," has been taken down under the supervision of Mr. C. W. Carey, the keeper of the picture gallery of the Royal Holloway College, and prepared for cleaning prior to its removal to the new school at Horsham. This picture is 87ft. long and 15ft. high, and, with its pinewood frame, weighs between two and three tons. The frame has been sawn into lengths, and will be used again. Another great canvas, illustrating the granting of the Charter, has been removed from the gallery.

A House of Commons Select Committee approved, on Monday, the preamble of the Bill authorising a company to supply to manufacturers in an area in South Staffordshire a new gas, invented by Dr. Ludwig Mond, which will furnish power and heat at a rate of about 2d. per 1,000c.ft.

The free library at Rochdale is being enlarged by the addition of a loftier block. The new wing will include, in addition to extra reading-room accommodation for adults and children, two art museum rooms about 30ft. square, and at the top a fine gallery for pictures, 70ft. long and 30ft. wide. The cost is estimated at between £4,000 and £5,000. The extension is designed by Mr. Jesse Horsfall, of Todmorden, who, when he was a member of the borough surveyor's staff, planned the present library.

The third main line room and other facilities to be removed, namely, between the Central Station at Newcastle-on-Tyne and Elswick Station, there has now been begun the demolition of property acquired some time ago by the railway company, on the south side of the line and between it and the river. A number of houses in Dunn-street, Water-street, St. Peter-street, and in Rye-house-terrace are being rapidly dismantled, in order to allow of the widening of the line there. Some of the houses are three-story dwellings of considerable size.

11. **Modern Vaulted Churches.** The late Mr. J. E. Fox, who designed several brick vaulted churches, has been lately elected Rector of St. Augustine's, Kilburn, and so Mr. Fox is to go. Will my reader furnish me with some of the names of these 'less with apses' ? A. T. B.

Substitute for Plaster. Do not res-

51714].—**Drawing Moments of Beam.**—If “A” is the area under the diagram for loading moment, be can find the bending moment and draw a polar diagram for the same, by the following method:—Draw a line *ab* parallel to the beam, and *ac* perpendicular to the beam. The corresponding horizontal polygon from horizontal line of beam, by projecting the lines parallel to those of polar diagram. For the same, it is found convenient to make the horizontal line of polar diagram 10 units of the length of the beam. If *ac*

[11714].—**Drawing Moments of Beam.**—The best plan for drawing the moments of a simply loaded beam is to divide the beam into parts, which beam is divided by load into equal sections, and plot the moments in the usual way to scale on vertical line of polar diagram. Take any point and join it by straight lines to these points, then draw parallel lines for the constant bending moment. Any textbook on construction will give "A Student" the method of proceeding. A good little practice will make the process easy to draw bending moment diagram for any beam differently loaded. I would advise "A Student" to get Turn's or Humber's textbook.—OLD STUDENT.

A company has been formed in Wishaw for the purpose of erecting a working-men's home in the populous district of Craigneuk. The capital is £4,000, and the 100 shares have all been taken up. Plans will be immediately prepared by Mr. Cullen, architect, Motherwell; and the home, which will provide 150 beds, is expected to be ready for occupation by October.

A Local Government Board inquiry has been held at Clacton-on-Sea into the proposed loans of £21,300 for East Cliff protection works, &c., £5,800 for gas and water works, and £100 for land.

Consternation has been caused in official circles in Leeds by the rejection of the sewage scheme by the House of Lords Committee. The corporation purchased the Gateforth estate for £85,000, and the property has been conveyed to them and paid for. The corporation have also entered into undertakings with the West Riding Rivers Board to deal with the sewage. The Bill will go forward with the rest of the provisions for tramway extensions and street improvements, but these are comparatively small schemes in comparison to the sewerage project. There is no appeal against the House of Lords Committee, whose decision is absolutely binding.

The Bishop of Liverpool's committee for promoting the erection of a cathedral in that city met in the town-hall, on Tuesday, and expressed much gratification at the encouragement they had received, the promised contributions reaching £110,000. As chairman of the committee, Sir William B. Forwood has issued an earnest appeal for additional funds, saying that he trusted to "all sons of Liverpool and those connected with the diocese to bear their share in this good and glorious work." The committee hope at an early date to ask the Lord Lieutenant to convene a public meeting of the diocese. The proposed site is not yet specified.

Mr. B. T. Batsford much regrets to announce that the second issue of Mr. Edwin O. Sachs's monumental work, "Modern Opera Houses and Theatres," promised for the opening of the opera season, has been unavoidably delayed by the illness of the author. It is now scarcely probable that Mr. Sachs's work can be reissued before the autumn.

The Bill which Sir John Brunner introduced on Monday night seeks to enable school boards to establish and maintain schools of science and art, science and art classes, and evening continuation schools.

The members of the Ipswich Scientific Society paid a visit on the evening of Wednesday week to the central station of the waterworks to inspect the new pumping plant, and also saw the plans for the new reservoir about to be constructed for the Ipswich Corporation in Park-road, Henley-road, from plans by Mr. Hamlet Roberts, the manager and engineer, at just over £20,000. It will be contiguous to the existing reservoir, and will have a storage capacity of four million gallons of water, of which three and a half millions will be "useable." The dimensions are 290ft. in length, with a width of 208ft., and an average depth of about 11ft. The bottom will be concreted, and the walls are to be of concrete also, in places about 10ft. thick. An iron and concrete roof, supported on columns and joists, will cover it in.

WATER FROM THE LAKE DISTRICT.—The Earl of Jersey's committee of the House of Lords passed on Monday the preamble of a Bill promoted by the corporation of Barrow-in-Furness to empower them to impound the upper waters of the river Duddon and the Seathwaite Tarn in the Lake district, and to obtain from 2,000,000 to 3,000,000 gallons of water per day from these sources according to the quantity of water in the river, so long as the flow did not fall below a certain amount. The measure was opposed by the urban district council of Millom, the Hod Barrow Mining Company, and the Millom and Askam Hematite Company, who all objected because they feared that the effect of diminishing the flow of the Duddon would be to cause the closing of the channels in the river estuary and so to put a stop to the sea trade of Millom.

The city parish council of Aberdeen are about to proceed with the erection of a new poorhouse on the lands of Oldmill, formerly the location of a boys' reformatory, about three miles from the city. Plans have been prepared, and the cost of the institution will be between £50,000 and £60,000.

On Saturday, Messrs. Christie, Manson, and Woods sold at their rooms, King-street, St. James's-square, London, a collection of pictures by old masters, the property of Mr. Arthur Kay, of 21, Winton-drive, Glasgow. Good prices were realised, and the collection, which consisted of 131 lots, produced £13,620 12s.

The district council of Newton-in-Makerfield have just accepted the tender of Messrs. John Smith and Sons, Midland Clock Works, Derby, for a large chiming clock with four dials for Newton-le-Willows Church. Messrs. John Smith and Sons have recently put up a large chime clock with four dials at Reading Co-operative Stores, and they are now making a very large clock for Beverley Minster.

Mr. Leonard Collmann, who for nearly thirteen years served the late Queen as inspector of the Palace at Windsor Castle, has been retired by the King, and terminates his service in July next. A few days ago the King conferred on him the medal of the Royal Victorian Order in recognition of his services.

The "William Black Memorial Beacon," which has been erected on the eastern coast of Mull, was lighted on Monday afternoon at 3 o'clock, for the first time.

Messrs. E. H. Shorland and Brother, of Manchester, have just supplied their patent double-fronted Manchester stoves, with descending smoke-flues, to the fever hospital, Birmingham.

• The Evesham Board of Guardians agreed, on Monday, to adopt the plans and estimates for a new infirmary and alterations of the existing infirmary, and to apply to the Local Government Board for sanction to a loan of £5,500. The Board some time ago rescinded a resolution to build an entire new workhouse. They have since erected cottage homes for children, and in addition to the new infirmary, new tramp wards, offices, and board-room are contemplated.

The foundation stone was laid on Tuesday of new Congregational Church buildings in Park-road, Wallsend. The first part of the scheme consists of the erection of a school-hall, classrooms, and vestries, at an estimated expenditure of £1,710. Mr. J. Walton Taylor, of Newcastle, is the architect, and Mr. F. J. Hepple, of the same city, the contractor.

A group of little drainage schemes, affecting various parts of Bristol, formed the subject of a Local Government Board inquiry held on Friday by Mr. E. A. S. Fawcett. Information was supplied by the city engineer, Mr. Yabbicom. Some of the schemes are to replace old and defective sewers by new ones, others to provide for the needs of extending suburbs, and the aggregate cost will amount to £3,835.

Mr. E. Vigers has made his award in the suit between the rector and churchwardens of St. Mary Woolnoth and the City and South London Railway Company, which has built its station under the church, and taken a portion of the churchyard for the purposes of exit. The amount of award is £148,000, but it is probable that the railway company will carry the case to the House of Lords, on the ground that Parliament prohibited the sale of the church for railway purposes, and that, therefore, they should only be called upon to pay "prairie value" as indemnity for the underground space and overhead exits which have been acquired.

The annual report of the Artists' General Benevolent Institution shows that the income for the past year amounted to £4,163, and that of the Orphan Fund to £1,987, 54 orphan children of artists receiving assistance from the institution.

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Our Illustrations.

ST. MATTHEW'S CHURCH, CHATEL ALBERTON.

THE Church of St. Matthew, at Chapel Allerton, Leeds, has been recently finished, and is now in use. The drawing herewith reproduced is now on view at the Royal Academy. The building is of considerable length, the nave having six wide bays. The roofs throughout are decorated with gold and colour. There is a high, but very open, oak screen, and the organ, with a painted case, stands on it. This ancient position for an organ has much to recommend it, especially acoustically. The case has been kept narrow, so as not to obstruct the view materially. There is a detached tower connected by a cloister-like passage with the church. Mr. G. F. Bodley, A.R.A., was the architect. We gave a view of the exterior of the church in the BUILDING NEWS for Jan. 6, 1899, from a drawing exhibited at Burlington House in 1898.

HAY'S LODGE, DEREHAM.

THIS house, also from the designs of Mr. G. F. Bodley, A.R.A., is built of red stone, and has a good deal of oak panelling internally. The bay windows are deeply recessed, and are all mullioned and transomed, and are fitted with lead lights, some having heraldic stained glass. The garden has been laid out in character with the house. The roof is covered with stone slates.

NEW POLICE COURTS AND FIRE STATION, BLACKBURN.

THESE buildings are from the plans of Messrs. Briggs and Wolstenholme, and Stone and Stone. The design was selected in competition, and is exhibited at the Royal Academy.

HOUSE AT HEATHFIELD.

MR. BASIL CHAMPNEYS is the architect of this house at Heathfield. The plans and elevations explain themselves. The drawing is on exhibition at the Royal Academy.

PROPOSED MUNICIPAL BUILDINGS, SOUTH SHIELDS.

THE drawing herewith illustrated is at the Royal Academy Exhibition. In dealing with the site at the disposal of the competitors, "the building with its principal frontage is placed facing Westbec-road, and is set back from the street line with the corner to Broughton-road rounded off," in order to obtain as imposing a view as possible. The principal entrance is on the Westbec-road front, and two working entrances have been placed on Ogle-terrace and Broughton-road respectively, and the main portal has been so arranged that it can be used in connection with the council-chamber and committee-rooms, without inter-

fering with the course of public business, for which satisfactory provision is provided in our plans. The building will be built in brick with a red tile roof, the walling being the cream of the best. The ground floor, generally, is finished in cement, and the first floor, walls and ceilings, in paper. The doors have been placed in the exterior, with the various rooms for each department grouped together, and with regard to ingress and egress from entrances, and with separate staircases leading to stores, etc., in the basement. The principal floor is reached by the two staircases. At the head of the main staircase is placed the inquiry office of town clerk's department;—this department having been placed on the first floor to be in touch with the council-chamber, mayor's parlour, and committee-rooms, which have been provided with an ante-room, conveniently placed, with direct access to each committee-room and the corridors. The councillors' assembly-hall has direct access to the assembly-room, council-chamber, ante-room, and mayor's parlour, making a very compact arrangement of this section, with necessary cloakroom adjoining. The principal entrance and staircase were intended to be built of stone with dados in faience. The building was to have been faced with H. worth Burn stone. The author of this design is Mr. Reginald G. Kirkby, of Sunderland.

NEW PREMISES FOR THE LIVERPOOL CO-OPERATIVE AND INDUSTRIAL SOCIETY, LIMITED.

THIS block of buildings, the first section of which is now in course of erection, will occupy the site of the society's existing premises in Sidwell-street, and that of the adjoining property recently acquired in Verney-place. The buildings comprise, on the ground floor, three shops with public offices and ware-rooms behind. On the first floor, show-rooms, class and committee-rooms, with secretary's offices adjoining. On the second floor there is a large assembly-hall with an open-timbered roof. The corridors and staircases are of fireproof construction, and are isolated from other portions of the building by armoured doors. The elevations are composed of red pressed brick with Bath stone dressings; the central gable being surmounted by a clock turret. The architect is Mr. Fredk. J. Commin, F.S.I., of Exeter and Westminster, and the contractor for the first section Mr. Geo. Herbert, of Exeter.

ITALIAN WOODWORK, XVI. AND XVII. CENTURY.

THE 17th-century Flower Stand in our sketch is boldly carved with foliage, scrolls, and mask design. The scrolls and foliage are picked out in gold, while the recessed portions are painted vermilion. The Chair of the 16th century is of the usual rich and effective character which were in general use in Venice at that period. In construction it has the appearance of the seat being fashioned out of two planks—one before and one behind; whilst a third formed the back. The planks were of sufficient thickness to allow of carving in massive relief—usually grotesque monsters or the arms of the owner on an escutcheon in the centre. Chairs of this type appear to have formed the decoration of the great corridors and halls, and were used without cushions. The Prayer Desk is of walnut, with pilasters at angles, carved with a figure design, terminating in foliage. It contains a drawer and cupboard, the door of the latter moulded and carved with a running pattern. In height it is 2ft. 10in. by 2ft. 2in. wide. This was obtained by the South Kensington Museum authorities for £19, and it may be seen with the other pieces of furniture mentioned in the same national collection.

NEW COUNCIL OFFICES, BRIMBY AND EDDINGHAM.

THIS building, which is now in course of erection, includes surveyor's office, rate-collector's office, council chamber, with usual lavatories, waiting-rooms, stores, accommodation for carts, messroom for men employed by the council, and caretaker's lodge. It is intended to erect the building of red Lincolnshire bricks, the roofs being covered with tiles or green Westmoreland slates; part of the two principal fronts are to be covered with stucco and hung tiles, the dome of the turret to be covered with copper, and the whole of the woodwork is to be painted white. The architect is Mr. John M. Desser, A.R.I.B.A., of Manor-street, Hull.

The new police buildings for Kirkcaldy, contracts for which have just been accepted by the town council, will cost close on £20,000.

COMPETITIONS.

MR. A. V. S. has been asked to prepare a competition for a new school for the public library competition at Keighley, and the Council of the Royal Institution of British Architects, and Mr. T. G. Stokes, F.R.I.B.A., make the proposal, and have set a competition for a modern school for the purpose of the borough council. Premiums of £50, £30, and £20 were offered. The limit of the expenditure is stated at £9,000. If each competitor had a share in the net commission he would receive about three pounds, and if the competitors' expenses were pooled, the winner would undoubtedly gain, from a monetary point of view, a considerably larger prize.

LEEDS SCHOOL OF ART. The committee of the Leeds Institute of Science, Art, and Literature have received the report of the adjudicator, Mr. W. H. Bidlake, M.A., architect, of Birmingham, on the designs for the new School of Art. Design No. 4, which had been placed first by him, was unanimously adopted. On opening the sealed envelopes it was found that this had been submitted by Messrs. Bedford and Kitson, of Leeds, and to them the work will be entrusted. The adjudicator, in his report, said that should the plans recommended be carried out, Leeds would be provided with an excellent School of Art. The work will be proceeded with forthwith, and the school, when ready, will afford accommodation for double the number of students accommodated in the old building.

CHIPS.

The Sun Insurance Office Annual Report is of the usual encouraging character. The profit balance on the year is £131,464 10s. An interim dividend of 4s. per share was paid in January, and a further dividend of 4s. 6d. will be paid in July, leaving a balance at credit of profit and loss account of £70,026 11s. 7d.

At a meeting of the Liverpool Queen Victoria Memorial Committee, held on Monday at the Town Hall, it was resolved that the memorial of the late Sovereign to be erected in the city should consist of a monument containing a statue. Subscriptions amounting to between £3,000 and £4,000 were announced at the meeting.

The great wheel for draining the Upwood New Fen District, erected by Messrs. Smithdale and Son, drainage engineers, of Acle, was started on Thursday in last week.

The town council of Newport, Isle of Wight, have appointed Mr. Walder as borough surveyor, in succession to Mr. F. W. B. Waterworth, retired. Mr. Waterworth has been given the honorary post of assistant borough surveyor at a salary of £1 a week, by way of pension.

Cardinal Vaughan and his household are leaving "Archbishop's House," Westminster, for their new residence in Ambrosden-avenue, Ashley-gardens, S.W. The new residence has been erected east of the new cathedral, and in direct communication with it. The cathedral, the diocesan hall and the house form one continuous pile of buildings of about 550ft. in length, occupying the whole length of Ambrosden-avenue, and have all been erected by Messrs. Shillitoe and Sons, of Bury St. Edmunds and London, from Mr. John F. Bentley's plans. The cost of the diocesan hall and house is close upon £40,000.

The Hare Hill estate, recently acquired by the Littleborough Urban District Council, was formally opened as a public park on Saturday. The estate covers twelve acres, and has been acquired together with the old family residence of the Newalls. This is a large house, and will now be used as offices for the district council and the school board, and to provide accommodation for a public library and museum; the outbuildings will be converted into stabling and storage accommodation for the district council and the fire brigade.

The streets and buildings committee of Edinburgh Town Council have adjusted their provisional estimates of expenditure for the year from May 15 next. On streets, footpaths, and public safety the amount proposed to be spent is £73,480, as compared with £74,110 estimated for the current year, and £76,074 actually expended in 1899-1900. On capital account the committee propose to spend £26,340, including £7,000 for sewers and drains, and sums in connection with the widening of the bridges at Bonnington and Stockbridge and the extension of Portobello Promenade.

Mr. A. A. G. Malet, C.E., held an inquiry at Driffield, on Friday, on behalf of the Local Government Board, respecting the application of the Driffield Urban District Council for permission to borrow £5,500 for gasworks purposes.

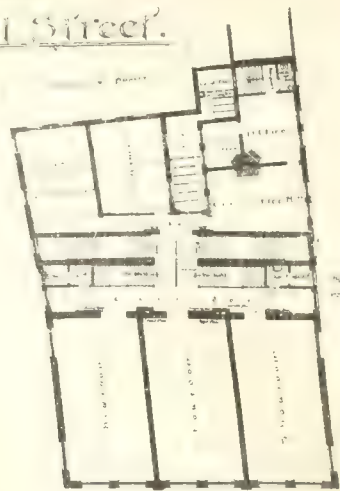


HOTEL DELLA POSTA AND COTTAGES UPON THE SUMMIT OF THE MONT CENIS PASS.



LAUS-LE-BOURG, SAVOY, AT THE WESTERN FOOT OF MONT CENIS.
"A TRAMP ACROSS MONT CENIS." BY HARRY HEMS. (See Page 654.)

Old Premises, Sildell Street.



First Floor Plan
(Approximate dimensions)

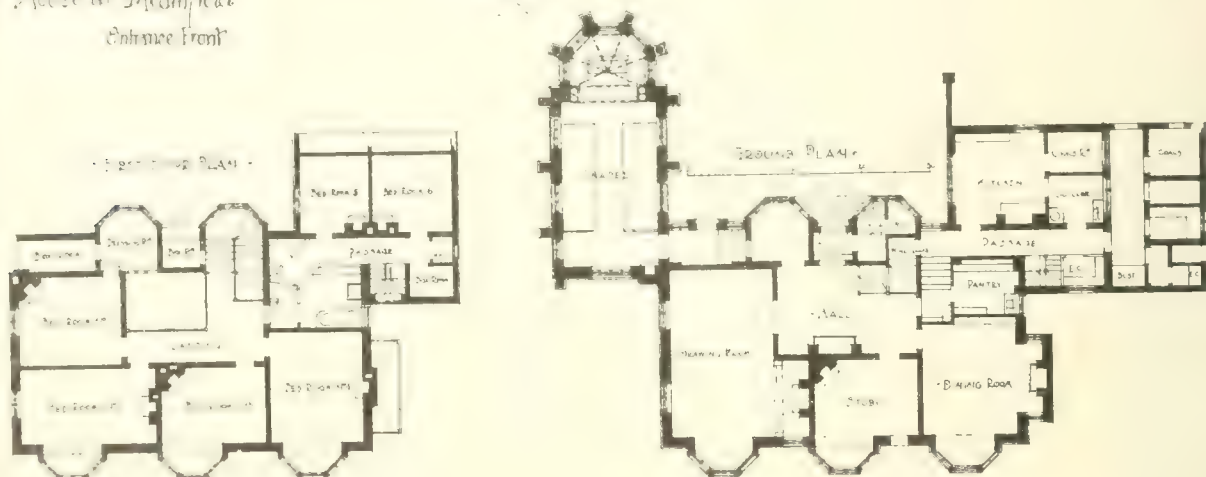


Handwritten signature: J. C. ...

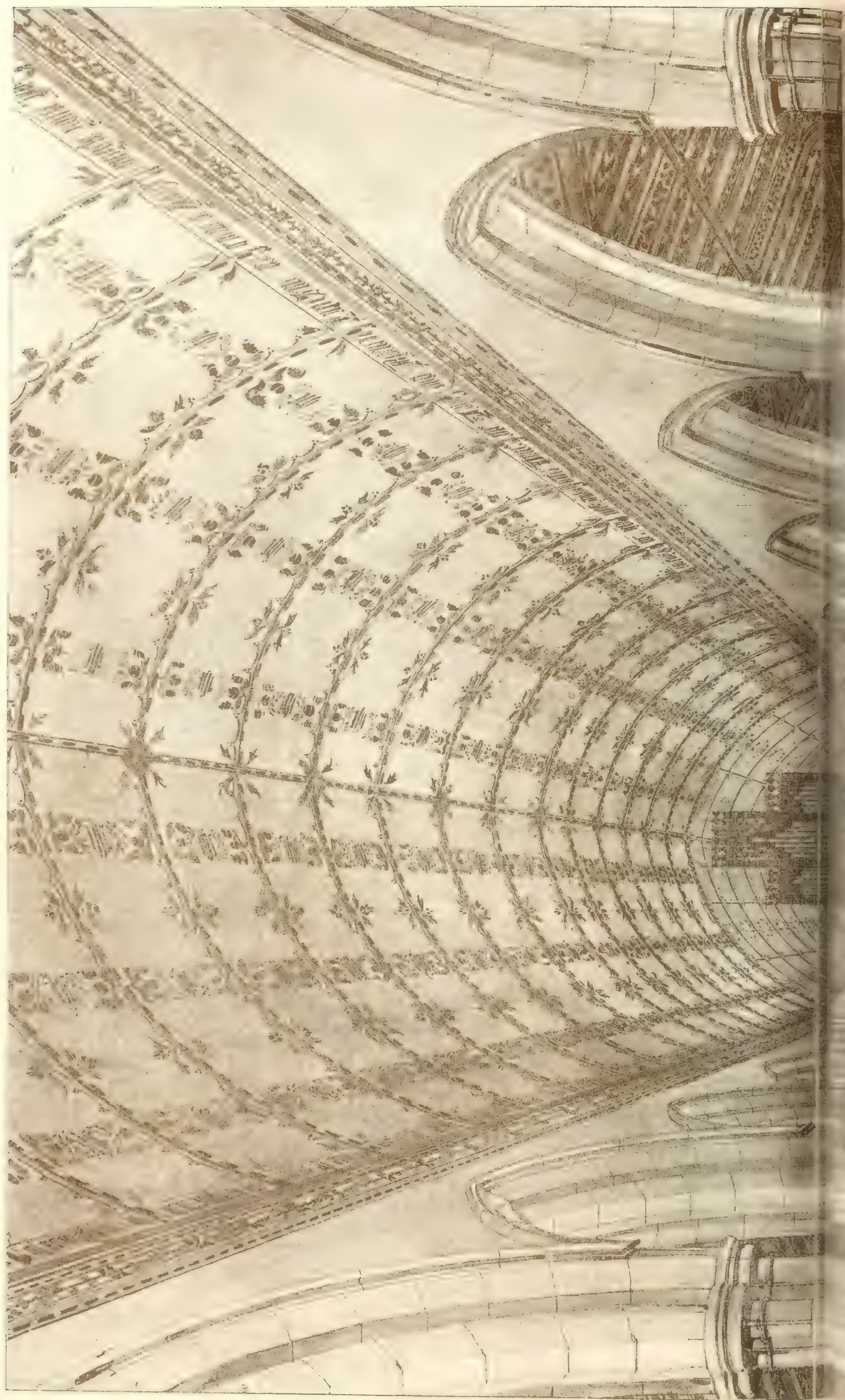
Exeter Co-operative and Industrial Society, Ltd.

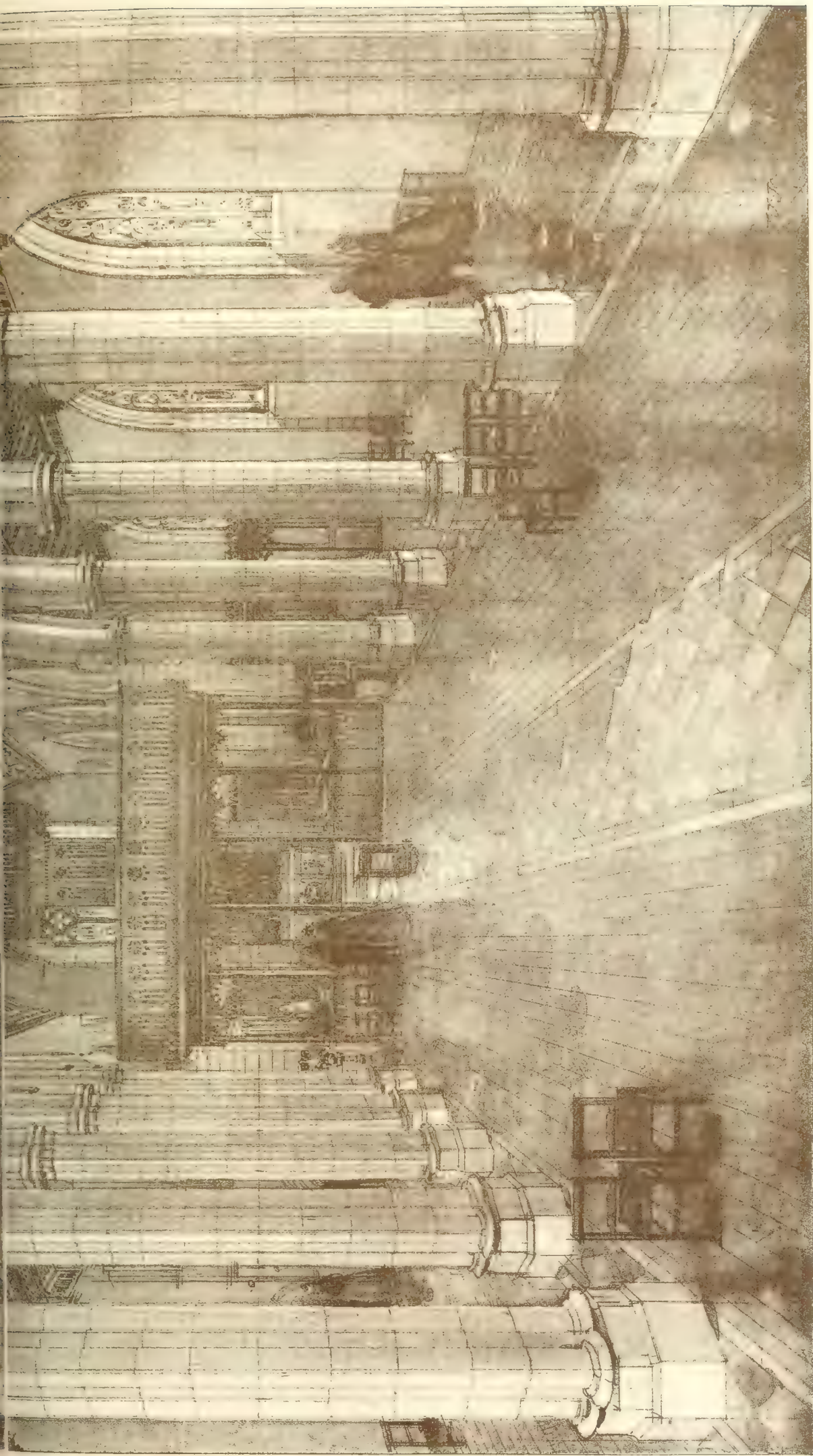


House at Heathfield
Entrance Front



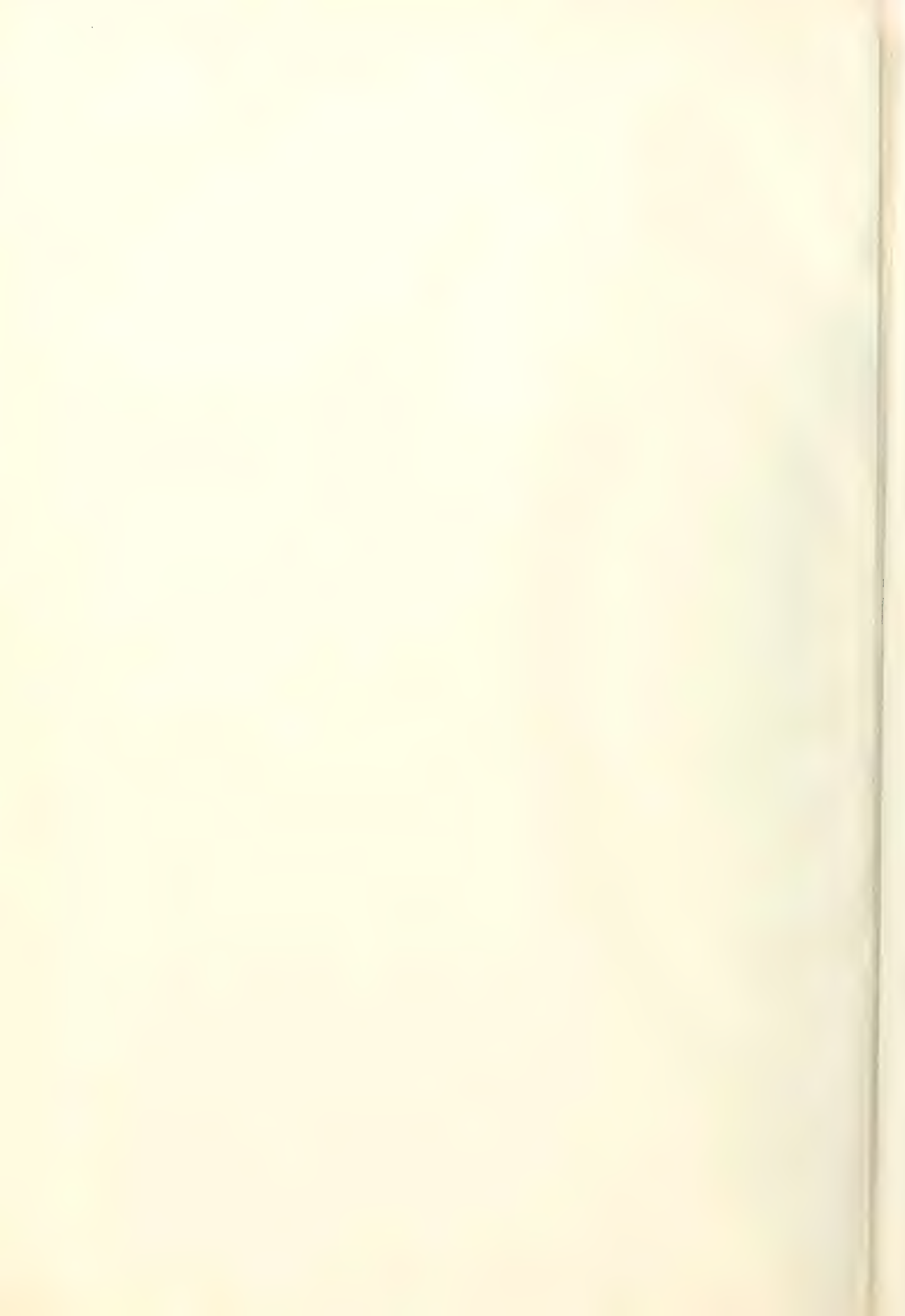
House at Heathfield
Terrace Front



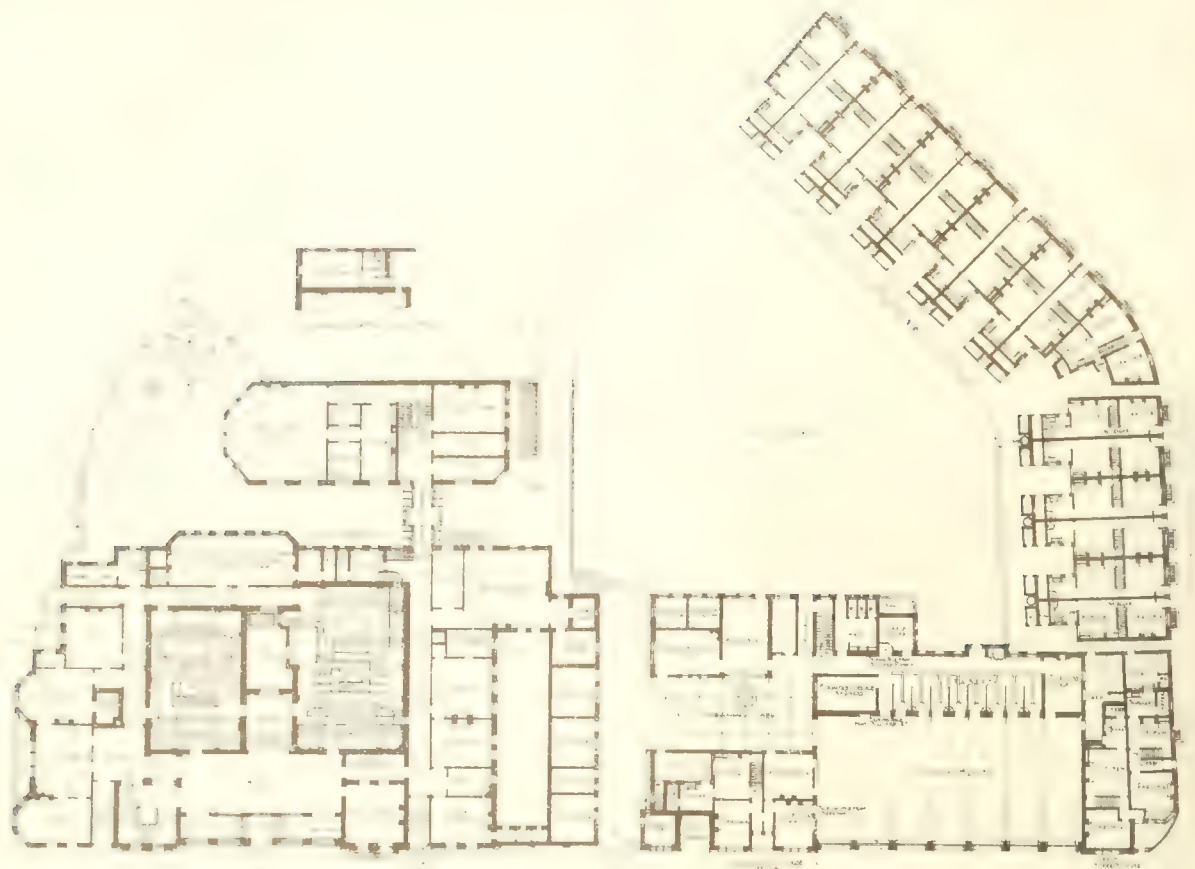


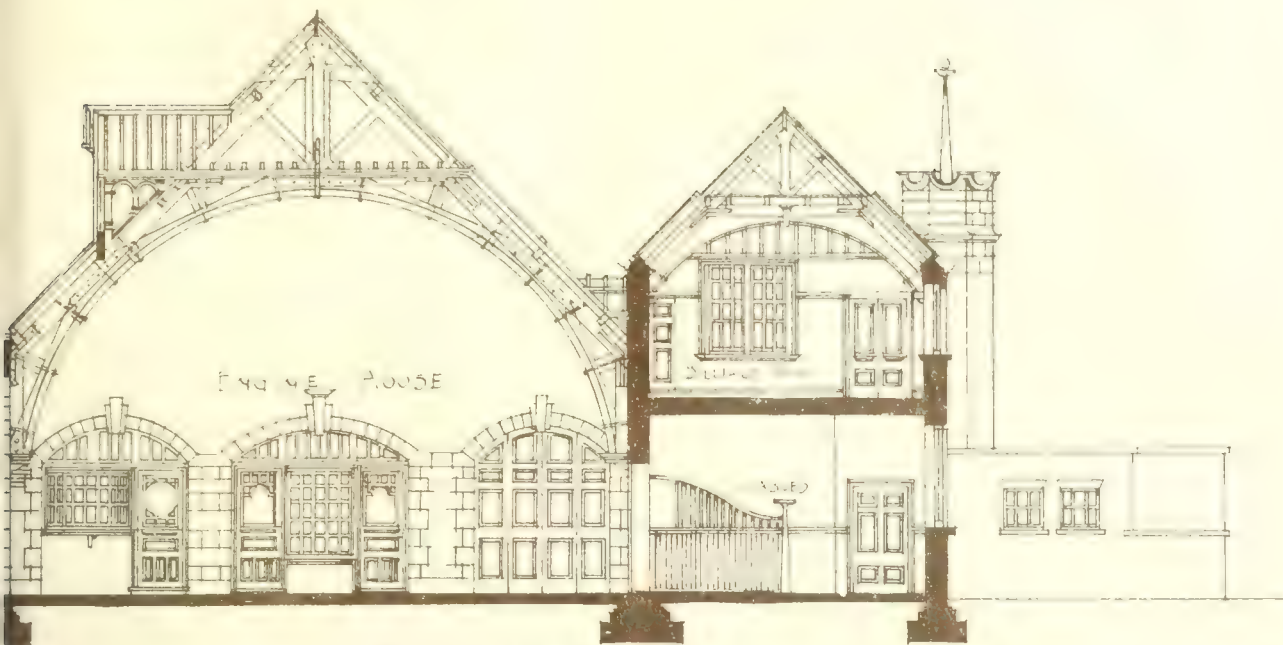
INTERIOR OF WATFORD CATHEDRAL, HAVIL ALBERTON

1881-1882







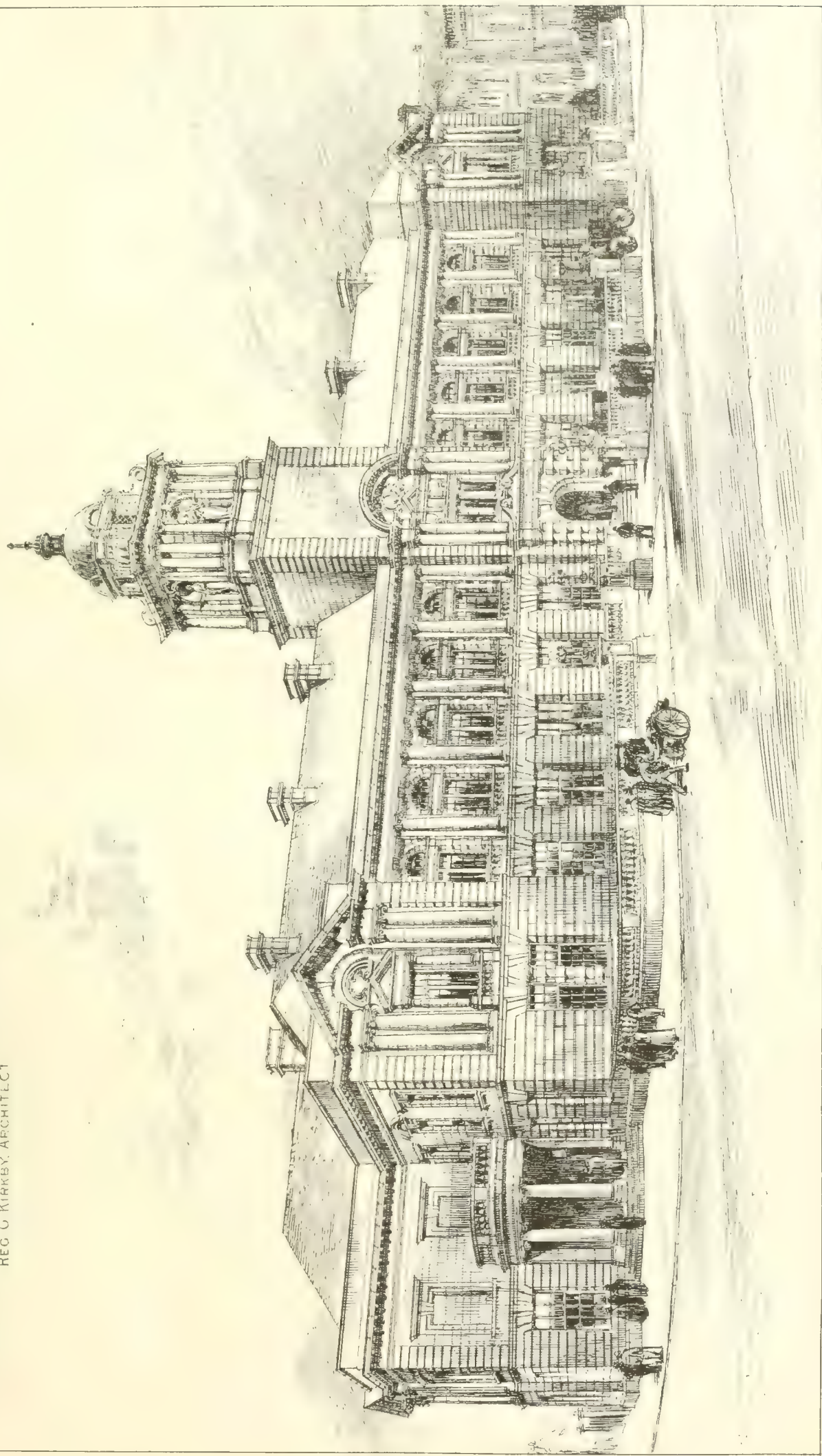


• CROSS SECTION •



DESIGN FOR SOUTH SHIELDS MUNICIPAL BUILDINGS.

REG. C. KIRKBY, ARCHITECT.

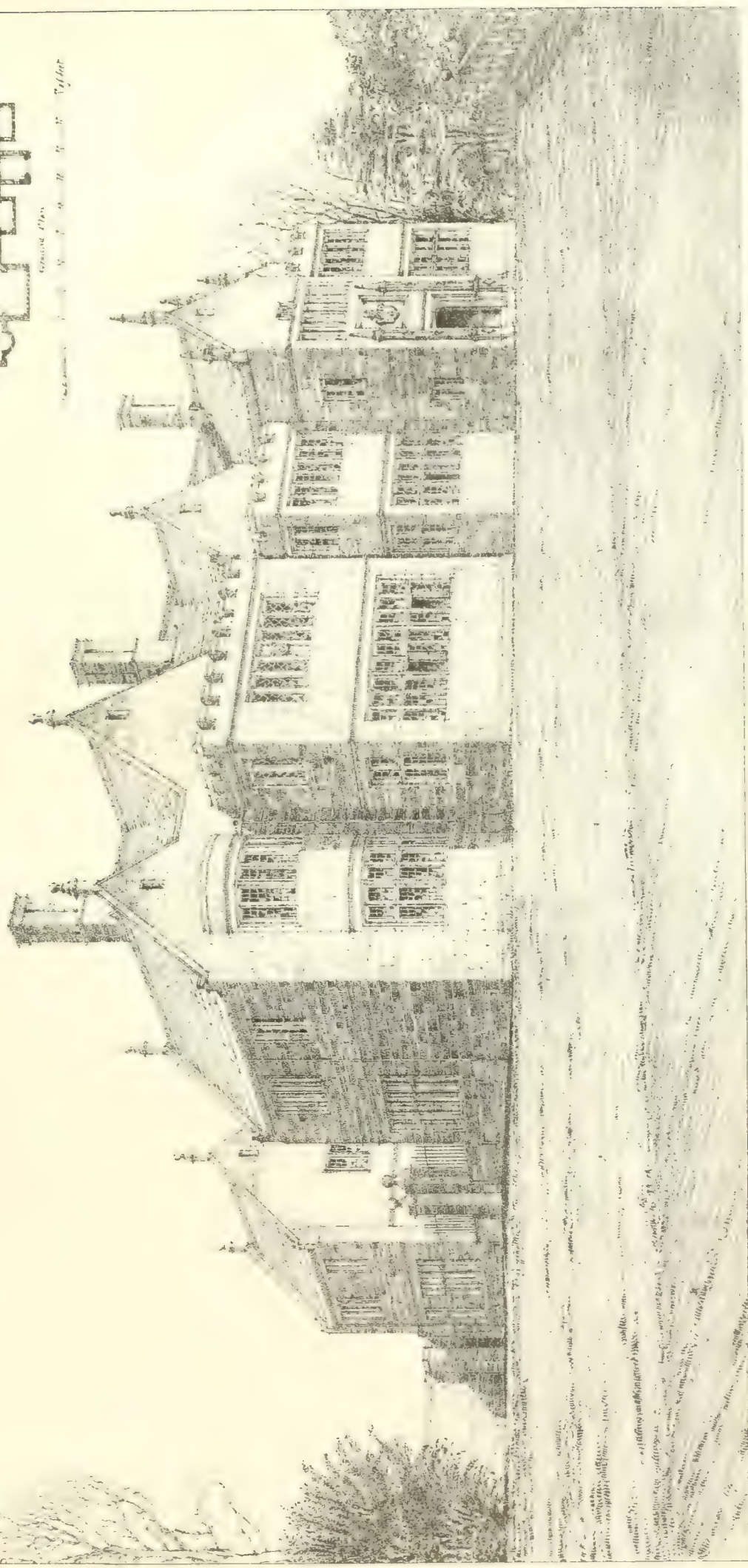


HAYES LODGE MORLEY
DERBYSHIRE
GEOBODLEY : A.R.A. ARCHITECT
7 GHAIS INN SQUARE : LONDON.



Ground Plan.

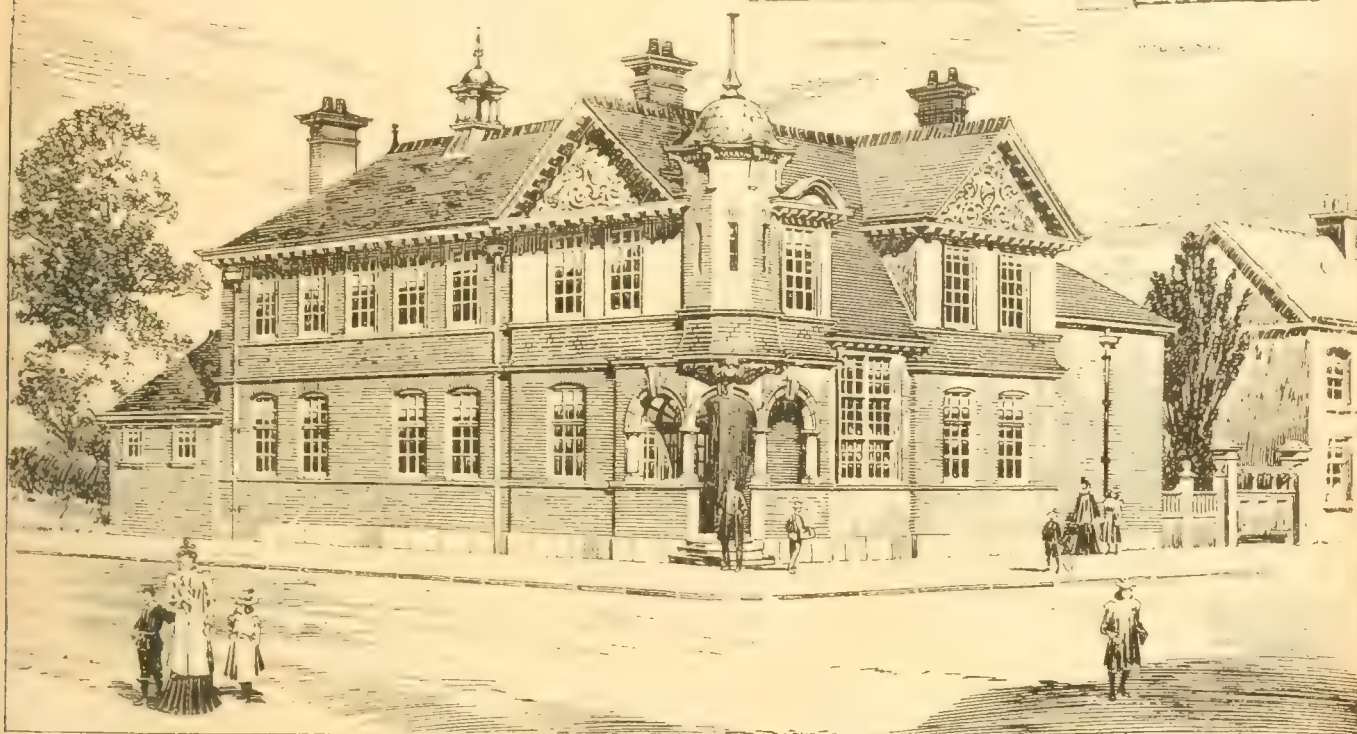
Scale of Feet 0 10 20 30 40 50 60 70 80 90 100





PROPOSED COUNCIL OFFICES
THE BRUMBY AND FRODINHAM
URBAN DISTRICT COUNCIL

John H. Dossor A.R.B.A. Architect. Hull 1900



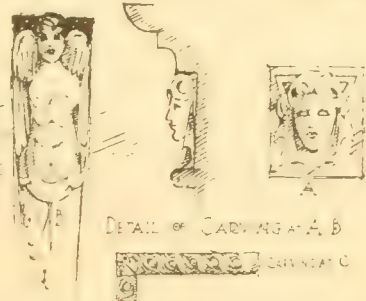
ITALIAN FLOWER STAND
PAINTED & GILT DECOR.



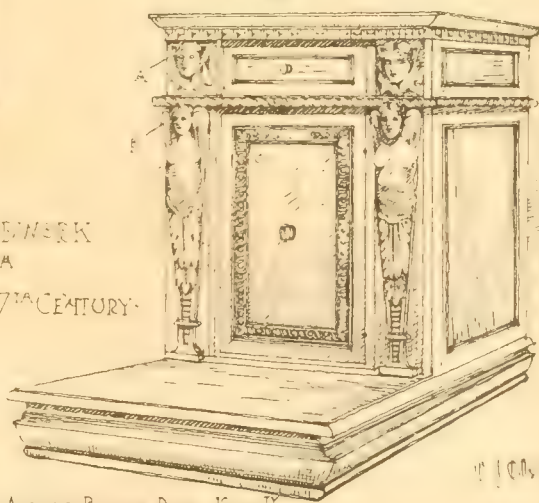
18" GILT CUPID
& GILDED ITALIAN
URNS.



DETAIL OF CARVING A, B
CARVING C



ITALIAN WOODWORK
OF THE 16TH
AND 17TH CENTURY.



ITALIAN PRAYER DESK 16TH

LEGAL INTELLIGENCE.

Metropolitan police magistrate sitting at the Thames Police-court, convicting the appellants of having

building notice on the respondent, the district surveyor, contrary to the provisions of section 145 of

the London Building Act, 1894, in that the appellants were also the surveyors of highways in and for the same district, and in that the appellants, by section 11 of the London Building Act, 1894, and section 11 of the London Building Act, 1894, granted the appellants, in respect of their dis-

trict, to erect and maintain in any street such boxes as might be necessary for purposes in connection with the supply of electrical energy. Such boxes were to be constructed of such materials as to be a source of danger. Section 12 of the provisional order provided that one month's notice should be served upon the Postmaster-General and the London County Council by the appellants.

On November 15, 1899, the appellants began to construct in Great Prescott-street, Whitechapel, three boxes of iron and brickwork in connection with the supply of electrical energy. The appellants, before constructing the electrical boxes, did not serve a building notice on the district surveyor under the London Building Act, 1894, section 145, in consequence of which the respondent took out a summons against the appellants to comply with the requirements of the Act. The magistrate convicted the appellants of having failed to do so, with £10 10s. costs. The arguments before the Divisional Court were heard on April 27 last, and judgment was now given, dismissing the appeal, with costs.

Mr. H. F. Dickens, K.C., for the appellants, contended that the district surveyor was not entitled to require the appellants to serve a building notice under section 145. The duties of the appellants were prescribed by the Electric Lighting Acts and the provisional order, 1892, and the London Building Act did not apply. The principle which governed the construction of the London Building Act, 1894, section 145, was that the appellants were not to be held to indirectly repeal or alter the words of a special and earlier Act without an indication of

such intention on the part of the Legislature. Mr. Justice Avory, K.C., argued that there was no inconsistency between the special Acts and the London Building Act, 1894. The notice under section 145 was a necessary cumulative remedy for the purpose of giving supervision to a public official, in addition to the Board of Trade. He cited "The Uckfield Rural District Council v. the Crowborough District Water Company," 1898, 1 Q.B. 101, and "London (Mayor), ex parte," Mr. Talbot, in reply, cited "London County Council v. Humphreys, Ltd.," and "Venner v. McDonnell." Mr. Justice Grantham, in giving judgment, said the appellants had failed to show that the decision of the learned magistrate was wrong, and judgment must, therefore, be for the respondent. The Legislature, in passing the Building Act, 1894, was fully alive to the existence and provisions of the Electric Lighting Acts, for we see that by sections 201, 202, and 203 they expressly exempt a great number of buildings, and by section 203 especially exempt local authorities

from the provisions of the Act. The appellants, having statutory powers for the supplying of electricity, from certain parts of the Act of 1894, which would otherwise apply to them. The insertion of those exceptions seemed, therefore, to show that the Legislature advisedly intended that the work done under these Electric Lighting Acts, and the provisional orders obtained under those Acts, should be under the supervision of the same authority that was entrusted with the supervision of all building works in the district, and he did not think the general rule as to compulsory supervision at all unnecessary. Mr. Justice Kennedy and Mr. Justice Grantham concurred.

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liable to pay to the respondent under the above Act. Section 151 of the Act provides that certain fees shall be paid by the builder, or, in his default, by the owner or occupier, and section 157 enacts that at the expiration of 14 days after the roof of any building surveyed by a district surveyor under this Act has been covered in, the district surveyor shall be entitled to receive the fees due to him from the builder employed in erecting such building, or from the owner or occupier of the building so erected. The amounts claimed by the respondent were fees to which he was entitled under this Act. The question was whether the complaints had been made within six months after the matter of complaint arose, as is required by the Summary Jurisdiction Act, 1848. The Lord Chief Justice, in giving judgment, said that the roof was completed in December, 1899, and at some date after the expiration of 14 days from then the district surveyor became entitled to the fee now claimed. Between January 17 and September 10, 1900, he delivered to the builder the bills contemplated by sub-section 2 of section 157 of the London Building Act, 1894. On July 2 the builder became bankrupt. On November 8 summonses were taken out against the owner, and it was necessary to consider whether the six months ran from the expiry of the fourteen days above referred to, or whether they ran either from the time when the bills were given to the builder (in which case some of the summonses would be out of time), or whether they ran from the date of the notices to the owner, October 20, 1900 (in which case none of them would be out of time). The material words were the 11th section of the Summary Jurisdiction Act, 1848, which spoke of the time "when the matter of complaint arose." It would be possible to hold that the matter of complaint arose when there was a neglect to pay the fees after fourteen days; but they could not hold that the whole matter was clearly ascertained at that date. Some of the fees under the Act required calculation, and in those circumstances the principle enunciated in "Pool and Forden Highway Board v. Gunning" applied—namely, that at that time the amount could not be so ascertained as to enable the debtor to pay. As against the builder, the time would run from the time when the bills were sent to him. As against the owner, time did not run until he had received a bill under sub-section 2 before referred to. They had to consider when there was a default. He could not say that the neglect of the owner to pay in default of the builder was such a default as would make the six months begin to run. None of the summonses, therefore, were too late, and the decision of the magistrate would be affirmed. Lord Justice Lawrence concurred.

AN ARCHITECT'S VALUATION. HARDING, EWING.

In this action, reported in our last issue, p. 625, Mr. Justice Bruce gave judgment on Friday. He observed that the defendant, at the request of the plaintiff, made a valuation of the houses; and plaintiff, relying upon that valuation, advanced £1,250 on mortgage, and undertook to make a further advance of £100 when a certain road had been completed. Plaintiff now contended that the defendant's valuation was excessive, and that this was due to the fact that the defendant based his calculations upon statements of Mr. Allday, to whom the advance was made. The defendant, in defence, said he was instructed to obtain his particulars from Mr. Allday, and that, as the statements of that gentleman as to the rents appeared to be reasonable, he was entitled to rely upon them. After reviewing the evidence, the learned Judge gave judgment for the plaintiff for £427 4s. 8d., with costs.

ALLEGED NEGLIGENCE BY AN ARCHITECT. PAGET V. DOLLAR.—MR. JUSTICE WRIGHT HEARD, IN THE

Queen's Bench Division, on Friday, this motion against an architect to recover damages for negligence, which was denied. Mr. Joseph Walton, K.C., stated that in March, 1897, the plaintiff, Major Paget, who is now in South Africa, employed the defendant, an architect, to prepare plans for certain flats at Church-row, Hampstead. The plans were prepared, and a tender was accepted in March, 1898, for erecting the flats. The defendant then requested an increase in his fees, which was refused. It was then agreed that the defendant should hand over the plans for the sum of £504, then paid to him, and withdraw from the work. It was assumed and understood by the plaintiff that the necessary consent of the London County Council had been obtained. It transpired that this was not so. The building-line was found to be in advance of the general building-line of the street, and, to a large extent, new plans had to be prepared before the consent of the Council could be obtained. This caused additional expense and a delay of several months. The defendant should first have obtained the consent of the Council, and not merely the district architect's approval. For the defence several architects were called, who stated that the defendant had followed the usual custom, and had done all that prudence would suggest; it was not always wise to anticipate the Council's objection. His Lordship gave judgment for defendant, with costs.

CHIPS.

The annual meeting of the British Association of Waterworks Engineers will be held at Birkenhead on July 9, 10, 11, and 12. A number of papers will be presented for discussion, and visits will take place to various waterworks and other places of interest in the vicinity.

The "tan gallop," one of the curiosities of Welbeck Abbey, is being taken down in order that the stone in it may be used in the rebuilding of the Oxford wing, which was destroyed by fire last October. The gallop is a long arcade, roofed with glass, which was built for the exercise of horses during inclement weather. The stone in it is practically identical with that of the Abbey, and the object in using it is to avoid giving the Abbey a patchy appearance when the work is completed. The gallop will be replaced by an avenue of trees.

This week there have been hoisted into the belfry above the clock tower of the new town-hall, Colchester, now being completed from plans by Mr. John Belcher, A.R.A., the chiming bells belonging to the clock. The largest bell weighs about a ton and a quarter. Both bells and clock have been presented by the late Mrs. Charles Hawkins and family, in memory of the late Alderman Hawkins. The old bell belonging to the ancient Moot Hall will also be hung in the tower, but will only be rung on special occasions.

The new public park provided for Portobello by the corporation of Edinburgh was opened on Friday. It has an area of 55½ acres, and its acquisition cost £26,359, in addition to £4,100 expended on laying it out.

The Preston Town Council have decided that their tramways should be on the overhead trolley system, that the gauge should be 4ft. 8½in., instead of 4ft., and that the lines should be constructed and worked by the corporation themselves.

The death occurred, on Thursday in last week, of Mr. J. E. Lash, an architect practising in Wrexham, who was found dead in bed at his home, Post-office-road, Gresford, Denbighshire. Deceased, who was 51 years of age, was formerly in business for himself, but a year or two ago he went as an assistant to another architect practising in Wrexham.

With a view to obtaining the best self-propelled lorry for military purposes the Secretary of State for War offers three prizes—a first prize of £500, a second prize of £250, and a third prize of £100—for the three self-propelled lorries which shall be adjudged, after a series of trials carried out by the War Office Committee on Mechanical Transport, to be best suited to military requirements. Designs must be sent in by September 1.

Mr. H. Percy Boulnois, an inspector of the Local Government Board, held an inquiry at Runcorn, on Friday, with respect to an application of the urban district council for sanction to borrow £2,300 for the extension of the waterworks. Evidence was given that the money was required to improve the pumping-station, and to erect a water-tower for the purpose of increasing the supply to the neighbouring township of Weston.

At their meeting on Wednesday, the city council of Bristol adopted plans by Mr. Henry Williams, of that city, for the rebuilding and extension of the police-court at the corner of Nelson and Bridewell Streets, at an estimated cost of £15,000. In the recent competition Mr. Williams was awarded the first premium of £100 for plans, the second of £50 going to Messrs. Buckland and Farmer, of Birmingham.

The Netherlands Government has introduced a Bill for the reclaiming of part of the Zuider Zee at the national expense. It is proposed to unite the coasts of Northern Holland and Friesland by a dyke stretching to the north of the River IJssel, and thus to reclaim an area of 113,666 acres. The expense is estimated at 95 million florins, and it is proposed to cover this by a loan repayable in 18 years.

Lord Overton opened, on Friday last, the new joint fever hospital, which has been erected on the Cardross-road at Havock by the Western District Committee of Dumfries County Council and Dumfries Town Council. The hospital site extends to five acres, and the buildings consist of administrative block, three pavilions, each containing a couple of wards, caretaker's accommodation, and other necessary structures. Provision has been made in the wards for 44 beds. The cost has been £15,000.

At University College a course of six lectures on Roman Britain is being delivered by Mr. F. Haverfield, Yates lecturer in archaeology, on Thursdays, at 4 p.m., the first of which was given yesterday. The subjects of the lectures are as follows:—(1) Previous Writers of Roman Britain from 1100–1900, A.D.; (2) Sketch of the Roman Conquest; (3 and 4) The Military Occupation, Army Forts, &c.; (5) The Civilisation of the Non-Military Districts, Towns, Villages; (6) The Sequel in Post Roman-England. These lectures are open to the public without payment or ticket.

Our Office Table.

The committee of the Architectural Association are this week issuing to all architects in practice a pamphlet giving particulars of the curriculum at the A.A. Day School, which is to be opened in October next at the Studio, 56, Great Marlborough-street, W. The school will be divided into three terms—autumn, spring, and summer, consisting of about 14 weeks each. The fee for the full course is 12 guineas per term, or 36 guineas per annum; or, for the lectures only, two guineas per term, or 35 guineas per annum for either the history or construction course. After payment of the fees for the first year's course students will be eligible for election as ordinary members of the Architectural Association without payment of the usual entrance fee of two guineas. The first year's course of the curriculum includes in the studio the use of instruments and scales, freehand drawing, elementary perspective, orders of classic architecture, elements of the various styles, principles of mechanics, elementary construction, and sketching and measuring details and portions of existing buildings. There will also be lectures upon "History of Architecture," and on "Elementary Construction and Materials," each comprising thirty-six addresses, and illustrated by visits to workshops or buildings. In the second year's course there will be a continuation of the subjects just named, also in advanced perspective and scenography, descriptive and applied geometry and graphic statics; and the principles of architectural design.

An excellent effect of lofty grandeur in St. Paul's Cathedral has been obtained by the erection of a range of pendent electroliers in the choir, and their design appears to be eminently satisfactory. They are suspended from the outer ring of the saucer domes, and have plain white rods, divided by bosses of brass or gilded metal, branching with triangular wings four ways in an effective way, the illuminating body of the same material below assuming in appearance a similar bulk and scale to moderately-sized candelabra. We have not had an opportunity of examining their detail closely; but, speaking generally, they are an important improvement, and the apparent height of the building is greatly increased by their introduction. The wrought-iron balcony front over the main cornice is being continued through the choir, and we can only confirm the objection which we have previously expressed as to the incongruity of such an unnecessary tampering with Sir Christopher Wren's masterpiece. The return faces of this scroll work seem to be coloured red, the front being gilt, and in itself the result may be pleasing enough in point of colour; but as to the objectionable character of the erection of any railing whatever in such a position, there can but be one opinion. We are in accord with the expression of condemnation from an architectural point of view, which one hears on all sides; but we cannot associate the name of Mr. Somers Clarke, the surveyor to the Cathedral, with the blame properly attaching to such a great and costly mistake, as we cannot think the setting up of this railing has his approval.

The London County Council decided on Tuesday, on the recommendation of the Housing of the Working Classes Committee, that a conference of delegates from the various Metropolitan borough councils should be called to discuss the steps they might propose under Part III. of the Housing Act, and in order to arrive at a working basis between the Council and the borough councils, so as to avoid the danger of two or more public authorities seeking to acquire the same areas. The committee suggest June 23 as a suitable date. The umpire having made his award of £10,560 in the matter of the claim of £17,792 of the owner for the sale and purchase of the garden of Albert-square, Ratcliff, the parks committee asked for a sum of £640 for laying out the ground. This was agreed to.

Mr. JOHN MARTIN, formerly a member of the Hackney Borough Council, draws a vivid picture, in the *Forum* of the "veritable Garden City" about to be provided by the London County Council. The site is just beyond the northern boundary, covers 225 acres, and is intended for a population of 42,500. These people will be domiciled in pretty cottages, not barrack tenements. In the centre of this model city the shops and public buildings will rise. Mr. J. Passmore

Edwards will provide a fine library. A river meanders through the ground that is to be converted into a park. There will be neither a slum to infect the air, nor a private landlord to make one. To enable the residents to reach their places of work, the Council's trams will run to the border of the estate, and the railways will carry the workers from any adjoining station to the City for 2d. per round trip.

THE Roads Improvement Association have started a movement, the object of which is to secure the construction of better and wider roads, adequate to the increased traffic and suitable for the new and more rapid methods of locomotion. The association point out that the present system of road administration is so cumbersome and expensive that very few local authorities can be induced to put it into operation on any large scale. Under all these circumstances, the Roads Improvement Association has determined to bring organised pressure to bear upon Parliament and the Government to amend the existing system of administration. The association, whose offices are 45, Parliament-street, S.W., invite the co-operation of all interested in the condition of the roads.

THE annual dinner of the Birmingham and District Clerks of Works' and Builders' Foremen's Association took place at the Acorn Hotel, Birmingham, on the 8th inst., about 100 members and friends being present. After the loyal toast, Mr. J. Patchett, the president, gave the toast of the Association, briefly calling attention to the splendid opportunities for usefulness which the association possessed, and urging the members to redouble their efforts so as to make it thoroughly representative of the whole of the building trades. Mr. H. Price, the city building surveyor, in responding, pointed out the need for improved trade education, and a better understanding in organised industries between capital and labour in face of the growing competition of other nations. The toast of the Hon. Members was given by the vice-president, Mr. S. Welsh, and responded to by Mr. A. Smith and Mr. J. Whitehouse; while the toast of the Lecturers and Visitors was given by Mr. F. Willis, and responded to by Mr. C. Bateman, F.R.I.B.A., and Mr. W. H. Whitehouse, A.M.I.E.E.

We can strongly recommend those interested to send to the General Electric Co., Ltd., of 69, 71, 88, and 92, Queen Victoria-street, for one of their lists of "Geeko" telephones. The bell-push telephones are an especially cheap, well-made line, and far preferable to much of the foreign rubbish that is being used. The "Kitchen telephone" at 16s. 6d., the "Compact telephone" at 10s. 6d., and the "Portable telephone" at £1 2s. 6d. are really wonderful value for the money. People in England seem strangely to ignore the fact that any of these bell-push telephones can be added to existing electric bells without further expense for domestic use, and the saving of time effected in communicating with servants or others in different parts of the house, or with stables or other outbuildings, is incalculable. Thanks partly to the attempts of the Telephone Company to establish a monopoly—which have completely broken down—we are years behind the Continent and America in this matter. Architects and builders should really wake up to this.

MR. HENRY BURN, the President of the United States National Wallpaper Company, gave some interesting testimony the other day before the Industrial Commission, at Washington. The wallpaper trust was one of the first ones formed in America. At that time the business of making such goods was very profitable, and it seemed to be good policy to cut off competition by a combination of interests. The results, however, have not justified the anticipations of those interested. New factories were soon established, to share with the trust the advantages of high prices, and competition again made its appearance. More than this, however, it turned out that consolidation, as Mr. Burn said, "resulted in a vast increase in the price of labour," through the advantage which it gave the unions in enabling them "to concentrate their efforts on one concern, instead of dividing them among a larger number." All these circumstances operated to make the business of the combination unprofitable, and its managers were wise enough, instead of sacrificing the property in useless struggles against adversity, to dissolve the trust, all the factories concerned in it being returned to the original proprietors.

MEETINGS FOR THE ENSUING WEEK.

- Monday. Royal Institute of British Architects. "The Sources and Growth of Architecture in Egypt," by Professor W. M. Flinders Petrie, D.C.L. 8 p.m.
- Tuesday. Society of Arts. "The Rise and Development of Egyptian Art," by Professor W. M. Flinders Petrie, D.C.L. 8 p.m.
- Wednesday. Society of Arts. "Training and Training Districts," by R. Brudenell Carter, F.R.C.S. 8 p.m.
- Thursday. Society of Architects. "Building Contracts," by H. H. Barker, M. Sc.D., St. James's Hall, Piccadilly. 8 p.m.

THE ARCHITECTURAL ASSOCIATION.

THE ARCHITECTURAL ASSOCIATION, 45, PARLIAMENT-STREET, S.W.

CHIPS.

A proposal is before the Shoreditch Borough Council to acquire a freehold estate in Haggerston which has come into the market, consisting of over 92 acres, which affords an opportunity for carrying into effect a comprehensive housing scheme for supplying the necessities of Haggerston. The property comprises about 263 cottages, three public-houses, and 23 shops, and is situated near Haggerston Station and the tramway.

The urban district council of Prestwich are about to apply for permission to borrow £4,800 for improvements on the Heaton Park side of the district.

The statue of the Prince Consort, which has occupied a position at Ward's End, Halifax, since 1864, was removed yesterday (Thursday) to a new site at the junction of Salterhebble and Skircot roads, for the greater convenience of the tramway traffic.

Lieut.-Colonel A. C. Smith, R.E., has held at Wealdstone, near Harrow, an inquiry into the application of the Urban District Council for sanction to borrow £3,650 for burial ground and chapel, £630 for a lodge, £1,300 for drainage, and £1,186 for road works.

The Light Railway Commissioners have submitted to the Board of Trade for confirmation an order made by them for the construction of light railways in the county of Somerset, in the city of Bath, and in the rural district of Bath.

Some interesting evidence with regard to the development of certain districts near Blackpool was given before a Committee of the House of Commons on Tuesday in support of an improvement Bill promoted by the town council of that enterprising borough. The development of the tramway between Blackpool and Fleetwood had led to the erection of "colonies" in districts previously uninhabited, and workmen were now able to obtain cheap houses.

The present scheme of the Birmingham Corporation for bringing water from mid-Wales to Birmingham is approaching completion, and the contractors will shortly carry huge mains into the heart of the city. The original estimate of the cost of the scheme was seven millions, of which four millions was for the first part of the scheme and the remainder for duplicating the mains when required. The estimates, however, have been enormously exceeded, and it is considered probable that the first part of the scheme will cost a million and a half more than was estimated.

Next Monday the first section of the doubled line of railway from Barnard Castle to Bishop Auckland will be formally opened for traffic between the former town and the coal-road crossing near Old Broomielaw. Other portions of the new line will be opened as soon as they are finished. The engineers of the North-Eastern Railway Company have just inaugurated operations at Barnard Castle, which, when finished, will completely revolutionise the system of signalling at the eastern entrance to the railway station.

Another important step has been taken towards the completion of the restoration of the ancient and interesting Norman church of SS. Helen and Giles, Rainham, Essex, in the erection of carved oak desks and seats for the clergy and choir. They were designed by the Rev. E. Geldart, and made by Messrs. Jones and Willis, and have been dedicated by the Bishop of Barking.

The county surveyor of Northumberland (Mr. Bean) has prepared plans for a new masonry bridge at Warden to replace the existing suspension one. The width of the proposed bridge is 24ft.—a 20ft. carriageway and a 4ft. footpath. The present approaches will be retained and the level of the railway unaltered. The cost of the proposed works, complete, is estimated at £11,500.

Trade News.

WAGES MOVEMENTS.

of the building trades has continued to improve, but

employed union members among carpenters and plumbers at the end of April was 3-4, compared with 4-7 per cent. in March. The percentage for April, 1900, was 2-2. In the furnishing trades employment is better than a month ago, but worse than a year ago. The percentage of unemployed

F.R.I.B.A., the Board of Trade arbitrator in the dispute between the master plumbers of Sheffield and the plumbers' union. The union had asked for 9d. per hour, and because it was not granted they came out on strike at the end of last year. Since then the struggle has been continued. In March the offices of the National Plumbers' Conciliation Board, of which Mr. John Skirrow, of Leeds, is president, were invoked, and on the 28th of that month the Board met at the Grand Restaurant, Leeds, to deal with the questions in dispute. New rules were introduced, and these were settled. With respect to the demand for an advance of pay, it was resolved that the demand should be referred to the Conciliation Board. The application should be made to the Board of Trade to settle the dispute. The union's demand was not settled, and the application was consequently made. Meanwhile men returned to work on the 1st of April at the old rate of pay. The Board of Trade appointed Mr. Blashill, formerly architect to the London County Council, and that gentleman met the Conciliation Board at Sheffield, and heard statements from both sides. His award was in favour of the union, and that the rate of pay should remain at 9d. per hour.

ST. ALBAN'S.—Unless the master builders accede to the demands made by the carpenters and joiners and bricklayers of the city, on or about June 1st building operations in the vicinity of St. Alban's will cease, and the men concerned will come out on strike. The men claim that employers of labour at St. Alban's do not pay a lower rate of wage to their bricklayers and carpenters than is done in the majority of places in the vicinity. The wages paid at St. Alban's to bricklayers and carpenters is 9d. per hour, while at Watford it is 8d. and at Watford 9d. and 9½d.

trade in Stockton, Thornaby, Middlesbrough, and the Hartlepool came out to the number of about 600 on Saturday, in support of their application for an advance of wages. The original demand made by the men in giving formal notice to the employers three months ago was for an increase of from 9d. to 10d. per hour; but on Thursday night in last week, at a joint conference, the men offered to take a halfpenny, which the masters refused. It has been agreed that the men should be paid the halfpenny per hour shall be exempted from the strike.

YORK.—The members of the York branch of the Operative Bricklayers' Society (London Order), to the number of about 200, struck work on Saturday. The difference between them and their employers is one respecting the working rules which have hitherto been in force. The men desire the abolition of the strike or lock-out or of alterations in the conditions of labour or remuneration must be given before May 1 in any year. The men desire the period of notice to terminate on February 1, claiming the advantage of the slack time at the back end of the year, and six months ago they requested the masters to make this alteration in the rules. The masters declined, and the men intimated that at the expiration of the conceded period they would strike to enforce their demand. The number of men involved comprises only about half the bricklayers resident in York, there being another trade union of the M. B. S. in the city, who are the M. B. S. of the city. The men have not joined the strike, but they, together with the carpenters and joiners, will, if things are pushed to extremes, come out in support of the striking bricklayers. Some of the men have been offered a halfpenny per hour, which the masters refused.

The borough engineer of Cardiff, Mr. J. H. Harpur, has submitted to the Watch Committee plans for the new fire brigade station and quarters for the brigade. The station will be built on a site at the corner of the Watch Committee's office.

LATEST PRICES.

IRON &c.

IRON &c.	Per ton.	Per ton.
Best English, London mill	£8 0 0	to £8 10 0
Best English, Middlesbrough	9 0 0	to 10 0 0
Best English, Sheffield	9 0 0	to 10 0 0
Best English, Yorkshire	9 0 0	to 10 0 0
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Best English, Lincolnshire	9 0 0	to 10 0 0
Best English, Leicestershire	9 0 0	to 10 0 0
Best English, Warwickshire	9 0 0	to 10 0 0
Best English, Gloucestershire	9 0 0	to 10 0 0
Best English, Wiltshire	9 0 0	to 10 0 0
Best English, Dorsetshire	9 0 0	to 10 0 0
Best English, Devonshire	9 0 0	to 10 0 0
Best English, Cornwall	9 0 0	to 10 0 0
Best English, Somerset	9 0 0	to 10 0 0
Best English, Herefordshire	9 0 0	to 10 0 0
Best English, Shropshire	9 0 0	to 10 0 0
Best English, Staffordshire	9 0 0	to 10 0 0
Best English, Cheshire	9 0 0	to 10 0 0
Best English, Lancashire	9 0 0	to 10 0 0
Best English, Yorkshire	9 0 0	to 10 0 0
Best English, Derbyshire	9 0 0	to 10 0 0
Best English, Nottingham	9 0 0	to

LIST OF COMPETITIONS OPEN.

LIST OF TENDERS OPEN.

BUILDINGS.

BUILDINGS

St. George's, Churchwell, Grantham	A. E. Mullins, Architect, 16, Church-street, Camberwell, S.E.	June 5
N. of E. of Ry. Co.	W. J. Cudworth, Engineer, York	" 5
Edinburgh, City Engineer, Exeter	F. Whitmore, County Architect, Duke-street, Chelmsford	" 13
Edinburgh, City Engineer, Exeter	Donald Cameron, City Engineer, Exeter	" 14
Edinburgh, City Engineer, Exeter	Edmund Pimble, F.R.I.B.A., 13, Fitzroy-square, W.	" 14
Edinburgh, City Engineer, Exeter	Henry Fielding, 2, Beaconsfield-street, Haslingden	" 14
Edinburgh, City Engineer, Exeter	W. H. D. Horstall, Architect, Tower Chambers, Halifax	" 14
Edinburgh, City Engineer, Exeter	Arthur J. Lacey, Architect, 6, Upper King-street, Norwich	" 14
Edinburgh, City Engineer, Exeter	A. L. De Rossignol, Resident Engineer, Pandon Bldgss., Newcastle	" 14
Edinburgh, City Engineer, Exeter	S. Land, Totton, Yorks	" 14
Edinburgh, City Engineer, Exeter	Cockin and Son, Architects, 13, Victoria-st., Westminster, S.W.	" 14
Edinburgh, City Engineer, Exeter	Larry Allcock, Architect, Bentinck Buildings, Nottingham	" 14
Edinburgh, City Engineer, Exeter	Settle and Farmer, Architects, Ulverston	" 14
Edinburgh, City Engineer, Exeter	Radcock and Pinner, Architects, 55, Pilgrim-st., Newcastle-on-Tyne	" 14
Edinburgh, City Engineer, Exeter	J. Lloyd, Llanymynydd, Wales	" 14
Edinburgh, City Engineer, Exeter	Harry Allcock, Architect, Bentinck Buildings, Nottingham	" 14
Edinburgh, City Engineer, Exeter	J. Black and Sons, Limited, Engineers, Wakefield	" 14
Edinburgh, City Engineer, Exeter	J. W. Broughton, Architect, 19, High-street, Skipton	" 14
Edinburgh, City Engineer, Exeter	Deighton's Flue and Tube Company, Pepper-road, Hunslet, Leeds	" 14
Edinburgh, City Engineer, Exeter	G. H. Johnson, Architect, 38, High-street, Rotherham	" 14
Edinburgh, City Engineer, Exeter	Harry Allcock, Architect, Bentinck Buildings, Nottingham	" 14
Edinburgh, City Engineer, Exeter	Roberts, Son, and Lory, Surveyors, Dorchester	" 14
Edinburgh, City Engineer, Exeter	E. A. Johnson, F.R.I.B.A., Abergeenny	" 14
Edinburgh, City Engineer, Exeter	J. E. Parker, Architect, Primrose House, Blackhill	" 14
Edinburgh, City Engineer, Exeter	Radcock, Lowther, and Walker, Hull	" 14
Edinburgh, City Engineer, Exeter	The Cornish Arms, Bury Port	" 14
Edinburgh, City Engineer, Exeter	Messrs. Davies, Staffordshire-row, Griffithstown	" 14
Edinburgh, City Engineer, Exeter	Walter A. Holson and Co., Architects, 82, Albion-street, Leeds	" 14
Edinburgh, City Engineer, Exeter	Openshaw and Gill, Architects, 6, Fleet-street, Bury	" 14
Edinburgh, City Engineer, Exeter	Herbert H. Dunstall, A.R.I.B.A., 9, New Road-avenue, Chatham	" 14
Edinburgh, City Engineer, Exeter	F. Armet, Architect, 178, Ellesmere-road, Sheffield	" 14
Edinburgh, City Engineer, Exeter	Gardward Pennington, Architects, Pontefract	" 14
Edinburgh, City Engineer, Exeter	H. W. Booth, Architect, Hopwood-lane, Halifax	" 14
Edinburgh, City Engineer, Exeter	E. A. Johnson, F.R.I.B.A., Architect, Abergeenny	" 14
Edinburgh, City Engineer, Exeter	J. Gunner, Edgware House, Knaphill, Woking	" 14
Edinburgh, City Engineer, Exeter	Swash and Bain, Architects, Midland Bank Chambers, Newport	" 14
Edinburgh, City Engineer, Exeter	Hussey and Walcott, 1, Gray's Inn-place, W.C.	" 14
Edinburgh, City Engineer, Exeter	J. Y. McIntosh, Architect, Cornwallis-street, Barrow-in-Furness	" 14
Edinburgh, City Engineer, Exeter	Moulds and Forrit, Architects, 77, King-street, Manchester	" 14
Edinburgh, City Engineer, Exeter	F. W. Purser, Architect, West-street, Gateshead	" 14
Edinburgh, City Engineer, Exeter	The Secretary, Lombard-street Creamery, Co. Cork	" 14
Edinburgh, City Engineer, Exeter	A. Ainsworth Hunt, Archt., 51, Abbeystreet, Bury St. Edmund's	" 14
Edinburgh, City Engineer, Exeter	J. Foster, Brownlow-road, Ellesmere, Salop	" 14
Edinburgh, City Engineer, Exeter	J. W. Start, F.S.I., Architect, Colchester	" 14
Edinburgh, City Engineer, Exeter	S. Knight and Parkinson, 175, Temple Chambers, Tudor-st., E.C.	" 14
Edinburgh, City Engineer, Exeter	Bland and Bown, Architects, North Park-road, Harrogate	" 14
Edinburgh, City Engineer, Exeter	Ashworth and Taylor, Builders, Milnrow	" 14
Edinburgh, City Engineer, Exeter	Arthur Hill, B.E., M.R.I.A., 22, George's-street, Cork	" 14
Edinburgh, City Engineer, Exeter	Lund and Potter, Architects, Worthing, Sussex	" 14
Edinburgh, City Engineer, Exeter	T. Taylor Scott, F.R.I.B.A., 43, Lowther-street, Carlisle	" 14
Edinburgh, City Engineer, Exeter	J. Didden, Glyde Path-road, Dorchester	" 14
Edinburgh, City Engineer, Exeter	Bland and Bown, Architects, Harrogate	" 14
Edinburgh, City Engineer, Exeter	H. E. Stelton, A.R.I.B.A., 100, Mosley-street, Manchester	" 14
Edinburgh, City Engineer, Exeter	Geo. Handley Johnson, Architect, 38, High-street, Rotherham	" 14
Edinburgh, City Engineer, Exeter	Arthur A. Gibson, Architect, 5, Prospect-crescent, Harrogate	" 14
Edinburgh, City Engineer, Exeter	Corson, Jones, Perkins, & Bulmer, Archts., 25, Cookridge-st., Leeds	" 14

ELECTRICAL PLANT.

Bradford—Electric Travelling Crane 5-ton	Corporation	C. J. Spencer, Tramway Manager, 5, Forster-square, Bradford	May 18
Motherwell—Lamp Columns, &c.	Electric Light Committee	James Burns, Town Clerk, Motherwell, N.B.	" 18
Tulrow—Electricity Works Machinery and Plant	Corporation	John Parker, Consulting Engineer, City Surveyor, Hereford	" 20
Todmorden—Telephonic Communication	Fielden Joint Hospital Committee	D. Sutcliffe, Town Hall, Todmorden	" 21
Bermansley, S.E.—Wiring, &c.	Borough Council	Kincaid, Waller, and Manville, Engs., 29, Great George-street, S.W.	" 21
Stoke-upon-Trent—Electric Motors, &c.	Guardians	G. R. Peers, A.I.E.E., Elec. Engineer, 96, Deansgate, Manchester	" 22
Stoke-upon-Trent—Electric Motors, &c.	Electric Lighting Committee	The City Treasurer, Town Hall, Hull	" 22
Stoke-upon-Trent—Electric Motors, &c.	Corporation	Lacey, Clough, and Sillar, Engineers, 78, King-st., Manchester	" 23
Stoke-upon-Trent—Electric Motors, &c.	Urban District Council	R. Hammond, M.I.C.E., 64, Victoria-street, Westminster, S.W.	" 30
Stoke-upon-Trent—Electric Motors, &c.	Urban District Council	Kincaid, Waller, and Manville, Engs., 29, Great George-street, S.W.	" 30
Stoke-upon-Trent—Electric Motors, &c.	Corporation	Spencer Hart, M.I.C.E.I., City Engineer, City Hall, Dublin	June 3
Stoke-upon-Trent—Electric Motors, &c.	Urban District Council	Robert Hammond, M.I.C.E., 64, Victoria-street, S.W.	" 5
Stoke-upon-Trent—Electric Motors, &c.	City Council	D. Munro, City Electrical Engineer, Exeter	" 14
Rio de Janeiro—Electrical Machinery	Brazilian Government	The Commercial Department of the Foreign Office, Whitehall, S.W.	July 8

ENGINEERING.

Port of London—Port of London Authority Ship Lock	Neath Harbour Commissioners	Gwyn Lewis, Harbour Superintendent, Briton Ferry	May 18
Port of London—Port of London Authority Ship Lock	Urban District Council	F. Worrall, A.M.I.C.E., Dist. Eng., Council Offices, Long Eaton	" 20
Port of London—Port of London Authority Ship Lock	Woodbridge Rural District Council	Geo. Cook, District Surveyor, Grundisburgh, near Woodbridge	" 20
Port of London—Port of London Authority Ship Lock	Urban District Council	H. Howard, F.S.I., Surveyor, Town Offices, Littlehampton	" 20
Port of London—Port of London Authority Ship Lock	Gas Committee	R. H. Townsley, General Manager, Gas Offices, Leeds	" 20
Port of London—Port of London Authority Ship Lock	Rural District Council	Barber Hopkinson and Co., Craven Bank Chambers, Keighley	" 20
Port of London—Port of London Authority Ship Lock	Gas Committee	R. H. Townsley, General Manager, Gas Offices, Leeds	" 21
Port of London—Port of London Authority Ship Lock	Pontypridd Urban District Council	Edw. Jones, Engineer, Gas Offices, Treforest, Glam.	" 21
Port of London—Port of London Authority Ship Lock	Deeside District Committee	Jenkins and Marr, Architects, 16, Bridge-street, Aberdeen	" 21
Port of London—Port of London Authority Ship Lock	Urban District Council	John Williams, Town Hall, Mountain Ash	" 21
Port of London—Port of London Authority Ship Lock	Gas Co.	W. Lewin, Secretary, Wye, Kent	" 21
Port of London—Port of London Authority Ship Lock	Docks Committee	W. W. Squire, Engineer, Cumberland Basin, Bristol	" 22
Port of London—Port of London Authority Ship Lock	Urban District Council	John Moreton, Moss Farm, Northwich	" 22
Port of London—Port of London Authority Ship Lock	Urban District Council	R. Fowler, Engineer, Station-street, Swinton	" 23
Port of London—Port of London Authority Ship Lock	Urban District Council	Thomas Hibbert, Surveyor, Greencroft	" 24
Port of London—Port of London Authority Ship Lock	Urban District Council	Sands and Walker, Engineers, Angel-road, Nottingham	" 24
Port of London—Port of London Authority Ship Lock	Town Council	Marriott, Son, & Shaw, Engineers, Church-st. Chambers, Dewsbury	" 25
Port of London—Port of London Authority Ship Lock	Corporation	F. W. Lacey, Borough Engineer, Municipal Offices, Bournemouth	" 25
Port of London—Port of London Authority Ship Lock	Rural District Council	Charles B. Newton, M.I.C.E., Engineer, Victoria Viaduct, Carlisle	" 25
Port of London—Port of London Authority Ship Lock	Local Government	J. Preston, Surveyor, Woodlands, Uttrother	" 25
Port of London—Port of London Authority Ship Lock	Urban District Council	The Greek Consul-General, Eastcheap Buildings, E.C.	" 25
Port of London—Port of London Authority Ship Lock	Stirlingshire County Council	F. W. Vanstone, Engineer, Palace Chambers, Penzance	" 25
Port of London—Port of London Authority Ship Lock	North Staffordshire Ry. Co.	Warren and Stuart, C.E.'s, 94, Hope-street, Glasgow	" 31
Port of London—Port of London Authority Ship Lock	Corporation	G. J. Crosbie-Dawson, Eng., N. Staffordshire Ry., Stoke-on-Trent	June 1
Port of London—Port of London Authority Ship Lock	Guardians	C. S. Allott and Son, 46, Brown-street, Manchester	" 3
Port of London—Port of London Authority Ship Lock	Urban District Council	William H. Hope, Architect, Hampton Wick	" 3
Port of London—Port of London Authority Ship Lock	Rural District Council	B. Latham, M.I.C.E., Parliament Mansions, Victoria-street, S.W.	" 5
Port of London—Port of London Authority Ship Lock	Wallasey Urban District Council	James Mansergh, Engineer, 5, Victoria-street, Westminster	" 16
Port of London—Port of London Authority Ship Lock	London County Council	H. W. Cook, Clerk, Public Offices, Egremont, Cheshire	" 18
Port of London—Port of London Authority Ship Lock	Committee of Works of Port	The Engineer's Department, County Hall, Spring-gardens, S.W.	" 18
Port of London—Port of London Authority Ship Lock	United States Government	The Commercial Department, Foreign Office, Whitehall, S.W.	" 19
Port of London—Port of London Authority Ship Lock	New Globe Cement, Chalk, &c., Co.	The Inspector-General of Irrigation, Upper Egypt, Cairo	" 25
Port of London—Port of London Authority Ship Lock	Mill Co., Ltd.	Oswald Brown, M.I.C.E., 32, Victoria-street, Westminster	" 25
Port of London—Port of London Authority Ship Lock		Joshua E. Hoyle, Secretary, Crossley-street, Halifax	" 25

FENCING AND WALLS.

Sanitary Committee	John Gammage, Borough Surveyor, Town Hall, Dudley	May 20	
St. George's, Churchwell, Grantham	George Gregory, jun., Architect, Stonehaven	" 21	
St. George's, Churchwell, Grantham	W. G. Thompson, Surveyor, Northam	" 25	
St. George's, Churchwell, Grantham	Main Drainage Committee	S. J. L. Vincent, Borough Surveyor, Newbury	" 25
St. George's, Churchwell, Grantham		J. Wilkinson, 3, Church-street, Padham	" 25

FURNITURE AND FITTINGS.

Winwick—Iron Bedstead, 47-in. x 61-in. Bedstead, 1901	Henry Ellis, Clerk, Winwick, Lancs	May 18	
East Ham—Kensington-avenue New School	H. C. Padgett, Clerk, School Board Office, East Ham	" 20	
Cardiff—Children's Homes	Arthur J. Harris, Clerk, Queen's Chambers, Cardiff	" 25	
Cardiff—School of Art, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st, 32nd, 33rd, 34th, 35th, 36th, 37th, 38th, 39th, 40th, 41st, 42nd, 43rd, 44th, 45th, 46th, 47th, 48th, 49th, 50th, 51st, 52nd, 53rd, 54th, 55th, 56th, 57th, 58th, 59th, 60th, 61st, 62nd, 63rd, 64th, 65th, 66th, 67th, 68th, 69th, 70th, 71st, 72nd, 73rd, 74th, 75th, 76th, 77th, 78th, 79th, 80th, 81st, 82nd, 83rd, 84th, 85th, 86th, 87th, 88th, 89th, 90th, 91st, 92nd, 93rd, 94th, 95th, 96th, 97th, 98th, 99th, 100th	Committee of Visitors	Geo. Dale Oliver, F.R.I.B.A., County Architect, Carlisle	" 25
Pontypool—Workhouse and Master's House	Guardians	T. Watkins, Clerk, Union Offices, Club Chambers, Pontypool	" 25

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FRIDAY, MAY 24, 1901.

DESIGN AND EXECUTION.

THAT a great deal of the best work has remained dormant in the artist's studio, and that some of the ablest designs have remained unexecuted, history has recorded. Is it not the fact that many of the designs of the greatest masters of architecture have been left unexecuted, or so altered and modified by succeeding architects that little of the original design is visible? The great basilica of St. Peter at Rome supplies us with a remarkable example. Had the designs of Rossellini been handed down to us for the great church which Pope Nicholas V. contemplated, we should probably have had some idea of what St. Peter's might have been; but the Pope died and the design of his architect perished, and nearly a century elapsed before the present Church of St. Peter was completed. Then succeeded the design of Bramante, whose splendid plan, if it had been carried out, would have made St. Peter's the finest cathedral in Europe in the Revived Classical style, with a great dome and triapsal arrangement, and a row of five bays of 400ft. long and of the same width, terminated by a colossal portico of three rows of columns. The design of Bramante, with all its great possibilities, also was left unexecuted by the deaths of Julius II. and of the architect himself. The nave was abandoned by his successor, Peruzzi, who prepared a design on the basis of a Greek cross, but he also died before the work was far advanced, and another design by Sangallo was prepared; but it too remained only a design on paper and in a model, till Michael Angelo succeeded to the great work, rejected Sangallo's many orders and campanili; but, as all know, his design was not carried out according to its original intention except the dome, for the eastern end and portico were completed by another architect after his death. Michael Angelo's design included a colossal portico with order of 100ft. in height, and isolated; but the executed portico is the best satisfactory part of the design as it is erected. We have, therefore, in the history of this great edifice, a series of designs, some of them of surpassing merit, that have only remained on paper and models. So it has been in the building of our own St. Paul's Cathedral. Few are aware that the present building is a much less magnificent structure in size and proportions than that designed by Wren, a model of which is to be seen in the north tribune of St. Paul's. It was planned as a Greek cross. And so we have in the building of the Louvre, about the same time as the latter cathedral, another instance of unexecuted designs, which shows us the successive phases of the French Renaissance from Francis I. to Napoleon, in which the architects engaged were Pierre Lescot, Du Cerceau, Bernini, Perrault, and Visconti. But the several influences of style and individuality have produced a more interesting building than would have been the case if the design of one architect had been carried out in its integrity.

We might go on to multiply instances of buildings executed that have little trace of the original design, owing to various events, local circumstances, and limitations that have been forced upon the builders. Nearly every great modern building in London, from the Houses of Parliament to the latest Government offices, has its own record of disappointed hopes, of plans and elevations that have been ruthlessly spoiled by official busybodies, red-tape regulations, by excisions,

prunings, parsimony, and popular taste. How many of the plans and elevations of these buildings have been shorn of the very features upon which the architect depended for effect—robbed of external domes, sculpture, or decorations? Very few know who have not been privileged to inspect the original design to see what has been left out, what modified, and what put in its place. No doubt sometimes practical experience has been of value in eliminating weak points and in making improvements. To the great historic examples we have mentioned, which have engaged the abilities of several successive architects, or that have taken years, perhaps a century or more, to carry out, as in the Louvre, compensatory advantages have accrued. The original designer's idea has been developed, or the additions made at successive periods impart an interest to the building; but as a rule this is not the case when the building is designed and carried out by an architect hampered by modern conditions. We must not lose sight of the fact that the conditions of architectural design have altered. Under the old master-builders *régime* he devised as he went on with the building, knew what he wanted; his drawings were rough geometrical diagrams for the workman, and had no pretence of being complete representations of the building. His executed building was more perfect than his design—the very opposite of modern practice, for now the executed building is generally inferior to the original conception. The reason is that modern practice and contract work have rendered it extremely difficult to realise the architect's ideas in the building. Thus it happens that the executed building in former times was superior to the drawn design: every artist and craftsman contributed his part to make it as perfect as possible; but in these days the architect's design is the more perfect production than the builder's work, for every effort is made to cut down labour, and to cheapen the result. Thus it is that to see the real architectural ability of the age we have in fairness to consult the architect's original design, for it embodies all he intended—his first and often best aspiration unfettered by financial and other considerations, whereas the building in too many instances exhibits a pitiable travesty of the original, shorn of its best features, or so reduced in substance that its likeness to the early sketch is not apparent. Unfortunately for architects, the future historian of the art will only see the buildings themselves; their authors' first conceptions and impressions will have disappeared—a good reason why the designs of important buildings should be kept and preserved in a national collection. After all, the public only see the actual results—seldom what the authors intended, and the impression thus formed is prejudicial to the profession. To judge properly, and to estimate correctly the architecture of the age, one ought to examine the designer's contribution—not merely that of the builder, whose work has been done by contract, and often hurriedly. How much talent is often buried or lies dormant in a pencil sketch, that is not seen in the building! When one sees a flat and spiritless piece of ornament in stone, or a metal bracket or grille, we are apt to blame the architect for its want of life and feeling; but is it not often due to the limitations placed on the worker, the desire to economise labour or to get it done quickly? And so it is with a good deal of our carved ornament and architectural relief. The work suffers, no doubt, from translation of the architect's motives and ideas. The craftsman in his execution fails to give emphasis to certain points of the drawing, and it comes out flat or thin or lifeless. It is the same as an orator handing over his speech to another to deliver; it is sure to lose half its power and vigoriveness of appeal. Many of the most eminent architects have felt disappointed at their

executed designs, and the consolation, and sensitive are those who are pained the most. We can imagine men like Pugin or the late J. D. Sedding desiring to execute their own designs in stone or wood, or to touch up their work after it is executed. The fact is the architect has in these modern days to work under many limitations—price, contract difficulties, inferior workmanship, clients' fancies and prejudices, all of which conspire to rob his design of its integrity and merit. Even the keen sense of art may become dulled by time, and so it is the practitioner, whose hands are full of work and contracts, has no time to be overscrupulous or sensitive about the manner his designs are executed. He cannot possibly design, or even see, everything that is done in the building; but others see it, and wonder how so talented an architect as Mr. So-and-So could have designed anything so feeble, so poor, or atrocious. Yet we see examples every day.

Architectural competition touches this view of the subject. The profession is invited to show what can be done to make a building worthy of its purpose and position—to do something more, in fact, than the individual architect, however skilful and experienced, who is employed by commission, can accomplish. The competition brings into the effort a certain kind of enthusiasm and aspiration which the commissioned architect cannot be expected to bring. Just now a great deal has been said about the Queen Victoria Memorial Competition. The very overwhelming number of opinions offered is a proof, if any was wanting, that the best ideas can only be sought for from an open competition—the convergence of many minds upon a subject that must gain by being presented from many standpoints. Indeed, we cannot understand the advocacy of those who think that a worthy memorial of the late Queen can be best obtained by competition confined to a few selected men, or to say, as the *Times* does, that the nation's affection “cannot be dealt with as if it were a contract for the supply of forage or the erection of barracks.” The analogy is not a happy one. It is not a question of goods, of quality and price as main factors; but of brains, of artistic conceptions, and the wider the choice, the more likelihood there is of a satisfactory solution. Do “the best artists hold aloof from competition”? If we interpret the adjective “best” as “successful” then we may admit the truth of the assertion. If ability, inherent strength, self-conscious power for conceiving great schemes are necessary, are we right in excluding men whose only fault is that they are unknown, and have not yet had the opportunity of coming to the front?—or is it just to shut out artists whose chief enemy has been their own reticence and reserve? And does not the history of architectural competition afford numerous instances of unknown younger men in the profession achieving the highest results? These questions must be answered before we condemn open competition. The designs for the Houses of Parliament, and St. George's Hall, Liverpool, could not have been possible if the architect had been selected from a limited few, to say nothing of modern successful buildings which have placed their authors in the highest ranks. The numerous public edifices we have illustrated of municipal buildings, technical churches, schools, institutes, colleges, hospitals, are largely due to competition. The younger men in the profession who have less to do and can give more time to their work form a factor which it would be absurd to ignore. But what we now wish to point out is that competition design, if it does not always insure the best executive results, has the greater opportunities. It has failed to realise them for one or two reasons—that the highest monumental

by state engineer, sculptors, landscape architects, and others. In fact, the State of France as a great builder carried out the great street of the Rue de la Paix, the Rue de la Rivoli, and the Tuilleries, to the Hotel de Ville, and to the Place de la Bastille, a noble avenue from the Louvre to the Tuilleries.

The man who can give the "keynote" of a scheme is he that has the grasp of the situation, and can indicate the lines of a national memorial, or the laying out of a city; but he is not found every day. A new idea, a plan with a distinct principle, or a design with what we call a "gambol" about it, is what a city needs, not a detailed but narrow design, which is really spoiled in the long run by all sorts of claims. And so it is with architectural plans. One man may see where a dozen can only grope. A great deal of time and labour are taken up by practical details, which are all right in their way after the plan has been conceived. Having the germ, the development can be intrusted to those of lesser originality; but somehow we are in the habit of peering about with claims and details before we think of a scheme. Has not this been the way of many London street improvements? The authorities have troubled themselves with claims of property holders, compensations, adjustment of easements, and the scheme is sacrificed to these necessities.

THE THRALDOM OF STREET BUILDINGS.

If anything could be done to relieve the monotony of our new streets, or the ugliness of many of our reconstructed thoroughfares, it would be a great boon. Probably at no former period since the rebuilding of London, so great a number of new streets have been planned at the present time. Take roadways that have been made through newly-developed estates, or those rearrangements of old streets for a more dignified and regular frontage. The Ladbroke-road, Rosebery-avenue, they are innumerable; or those in the South of London, such as in Church-street and Golden-square, in Camberwell, and Brixton-road. These and many more exhibit the kind of elevation of which we speak. In the plan of the old houses and shops have arisen rows of compactly-built brick houses, many of them with shops on the ground floor, that to the ordinary inhabitant who concerns himself little with architecture are all that can be desired—neat, well-built, and clean, but to others are intensely commonplace and ugly, that do not improve with age. The average Cockney cares little for artistic building, or pleasing conformations of street or skyline; but he has a fairly keen eye for what pleases him to live in. He generally prefers to get out as far as possible into the suburbs to live as he can. Why? Perhaps he cannot tell you definitely; but he really feels sick of the dismal, straight brick walls and monotonous outlook of town life, and he goes out farther to get a little fresh air, and it may be a garden in which he can while away a few hours of the week. Those advantages may entice

not entirely all. The oppression of the closely-packed streets and suburban high roads form a considerable part of the sum total of reasons which impel him to go out. Although he cannot positively be sure, he begins to think that the old irregular line of the old street had a charm, after all. There was a semi-rural look about houses of varying heights and projections with flat sash-frames and gauged arches or bay windows and half-Gothic gables and chimney-stacks; they are at least more picturesque, he will admit, than the straight frontages of the newly-built houses. Hence, though a stickler for modern order and newness thinks the rebuilt street has advantages, he is inwardly conscious of a depressing influence in the new buildings. Those of an artistic temperament can at once define the cause. They are convinced of certain laws of formal significance. One is that uniformity of any kind, such as the flat front and horizontal lines, produces a degree of weariness and fatigue to the eyes and nerves, and through them to the mind, that are distinctly painful, more so perhaps to the highly sensitive and impressionable, but in a lesser degree to everyone. If we could, therefore, try to minimise these oppressive effects in our newly-constructed street buildings, a great deal might be done to mitigate the evil of which we speak. It is no exaggeration to say that the weary repetition of houses of one uniform elevation, and in a straight line, has a most depressing action on town-dwellers. Purity of air and other hygienic conditions draw many into the country; but to how many among them has not environment been one of the main causes. It may be a long time yet before the masses of the dwellers of our towns will begin to discern that hygiene is not entirely confined to good drainage and ventilation, but implies all those agencies that administer to the mind and emotions. That the architecture of our towns has a powerful influence on those that dwell in them there can be no doubt. Our densely-packed East-end streets, composed of factories and dwellings of the poor, many of the lofty City warehouses that shut out air and obscure the sunlight, the heavy oppressive blocks of labourers' dwellings, are distinctly oppressive. They not only shut out light and air, but offend by their uncouth lines. It is for those who administer to the artistic perceptions—and architects are largely responsible—to do all they can to minimise the appearance of discord and monotony, two of the evils of modern building. More than other artists, the architect has to deal with all that goes to make the visible and outward impression of our cities. Building occupies by far the largest area of a town, and, therefore, anything that can be done to make the lines of our streets and building more agreeable, and their arrangement more artistic, should be the architect's aim and aspiration.

We dwell now on the growing prevalence of flat fronts and horizontal lines in our street buildings. Every one who has travelled through Shadwell or Bromley, or from London Bridge through Deptford, must have noticed the wearisome repetition of straight lines, newly-formed streets of small tenements, each exactly alike in elevation, height, and depth; their frontages forming straight, flat walls perforated by windows and doorways, with the same repeat of bay windows. These small streets are exceedingly wearisome in their uniformity. But in the better and higher-class neighbourhoods the same monotony is repeated, as in the Western districts of Kensington and Hammersmith, or Paddington, where streets of new houses have been built with the same unvarying elevation. If the lines of new streets are unhappily made straight, the architect may at least adopt elevations that will to some extent minimise their directness, by the adoption of expedients such as breaks in the

lines, or introducing gables and dormers. He, of course, is bound by the rules and regulations of the Building Act, under section 22. A prescribed line of frontage is set, and he has followed it; no projections are permitted beyond the line, and therefore, as regards plan, the architect is restricted; and if he desires to break or vary the proportions of his front, he must set back his line so that the most prominent part of the building do not project beyond the "general line of buildings in any street or any part of a street or row of houses." Then buildings that project beyond the "general line" determined upon, if taken down or destroyed by fire, have to be set back to the same line. These regulations have, therefore, discouraged any play or recess in building plans; but the architect is not so restricted as to elevation if it does not exceed the statutory limit of 80ft., and, therefore, he has the choice of several expedients. We may notice a few of these. We take first the gable summit. We see this plan largely used in some of the newly-formed streets at the West End. Each house is gabled, though the same design is not necessarily repeated; but the gables vary with the elevations. Of course, this mode gets over the straight parapet lines, and we have a succession of gabled houses in the same plane, with the roofs at right angles to the front. This plan avoids the monotonous horizontal parapet, which is so depressing. In its place we get a number of sharp-pointed lines when seen in perspective, with ridge lines in step-like succession more or less regular. But even the gable may become monotonous, if not varied in height or shape. Each house is a unit in itself; in fact, we have a succession of units more or less diversified by variety of gable treatment. In Holland a succession of gabled houses line the canals. Another common treatment is the use of bay-windows carried up all the stories. These break the flat wall fronts, and their upper lines or summits seen in perspective take off the rigidity of the straight lines. Section 73 (5) provides that in a street of not less than 40ft. or to a building, the front wall of which is not at a less distance than 40ft. from the opposite boundary of the street, bay windows may be erected on land belonging to the owner of the building, notwithstanding the provisions of this Act relating to buildings beyond the general line; but such bay windows must not exceed three stories in height from level of footway, nor project more than 3ft. from the main wall of building, and they are limited to three-fifths of the frontage in width. The erection of dormers in the roof above the eaves-level is a common expedient in town buildings. These gables project from a curb roof, and effectively break the horizontal lines of the façades. The French buildings of the time of Francis I., such as the Chateau de Blois and Chateau de Chambord, exhibit the full development of the dormer; but in our street buildings we have not yet made the most of this feature in giving relief to the skylines. They are sometimes small and insignificant excrescences. A mode of treatment that seems worth following is what we may call the gable and parapet termination of the street elevation. It consists of a series of single or two-storied dormer gables separated by parapets, straight or ornamental, and this method of breaking the upper lines of our street elevations has been carried out successfully in several new buildings. We may mention a block in Brixton-road, a little beyond the cable terminus of the tramways company, where a row of red-brick buildings intended for shops and residences has been erected in place of a line of old and dilapidated houses and shops. The fronts are broken by three-story bays, with dormer gables arranged in pairs over. There is no attempt at ornamentation except bands of stone; but the architect has saved

is work from monotony and commonplace by this bold breaking of the eaves-line. The dormer gables rise some height above the eaves-level, and, being placed in pairs, make a pleasing variation. The roof is curved, and the ends of the block are terminated by bold octagonal corners, with low, flat-shaped cupolas at the return angles. This example shows what can be done by simple means to give variety to a long row of street-buildings. The arrangement of the windows in pairs, only a few feet of space between them, and the dormers taken up above them, with an interval of flat wall and two windows between the coupled bays, break up the front, and as seen in the perspective the effect is pleasing. The shops divided by stone pilasters project and receive the bases of the projecting bays. We may remark that all salient features or breaks are more agreeable when arranged in pairs or couples, with an alternate longer interval of plain flat façade than when multitudinous, and agrees with a known law of repetition with variation. A good relief, though inferior to the last, can be obtained in a flat-fronted row of houses simply by carrying up the front at intervals; narrow projection, say, of half or one brick, this being gabled above the cornice-line. These narrow gables could be made appropriately to occur at the entrances, and if there were shops below, would mark off the entrance from the glass front. Our argument is, that anything that breaks the flat front, however slight, contributes to relieve the horizontal cornice of our street-buildings when seen in perspective. When this cannot be had—when, in fact, the front façade is compelled to be for certain reasons quite flat—the architect ought to avail himself of the only other alternative, by avoiding the straight, uninterrupted, horizontal cornice or eaves-line—breaking it, either by dormers or gables, or a variation of some parts of the front wall, with high parapets quite plain, or ornamentally treated, and other parts kept low as overhanging eaves—a plan we have seen followed in some buildings. It will be said the straight horizontal eaves, cornice and parapet, is less expensive. Perhaps the building owner may have to pay little more in the shape of gable fronts and lashings by breaking his lines; but this slight extra ought not to be considered when the improved appearance and the greater attractiveness is regarded. But in many cases the effect can be produced by having deep curb roofs for the upper story, so that the front may be reduced in height at the intervals between the gabled portions as we have indicated. Our new streets might at last be attractive if we could throw off the raiment of the straight parapet and roof which have so long held supremacy.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE thirteenth ordinary meeting for the present session of the Institute was held on Monday evening, the President (Mr. W. Emerson) in the chair.

THE LATE MR. ARTHUR CATES.
MR. JOHN SLATER said he regretted to have to announce the death of Mr. Arthur Cates, formerly Vice-President of the Institute, and one with whom he had brought into frequent contact during the past ten or twelve years, and had seen a great deal of his character and generally appreciated. Cates was an exceedingly strong-minded man, and was perhaps a little too prone to show his strength; but under that overbearing exterior beat one of the kindest of hearts. All young architects would be grateful to him for the lessons he so ungrudgingly and unostentatiously shared with them, and to the cause of architectural education. He was not only an able man, but a very learned man, and he often enriched his friends by the wide range of his literary pursuits. It was not too early to speak of his services to the Institute; but the work he

did in organising the statutory examinations in architecture would have been highly esteemed, and it is to be hoped that long and hard the compulsory examinations would never have been established. He was a decidedly ideal character, all the laudable and fine qualities which characterised him as a member vanished when he took the chair, where his authority and business-like dispatch were remarkable. Arthur Cates was a man who took life for all in all, we should not look upon his life as again. He proposed that a vote of condolence be sent to Mrs. Cates.

MR. WILLIAM WOODWARD, as Mr. Cates's assistant, seconded the motion. It was, he said, a very sad thing to see one who had entered the office of Mr. Cates, and very frequently they were working together from early morning till late at night. Mr. Cates was a great intellect and a voracious reader. His passion for work terrified those in his office and was not without its unfortunate, when he would hear, but, even in his business, in an extraordinary amount of energy was devoted to the welfare of the Institute. He was a keen architectural critic, and his memory was remarkable. He appeared to have mastered and to be able to recall every detail of every building he had once seen. He often descended on the chairs of his colleagues to his assistants; but his own handwriting was so far from clear that he had sometimes to ask their help in deciphering it. He had a marvellous power of grasping the pith of a letter, and would rapidly dictate a reply to a long letter in a terse and clear manner. In personal character he was *very good and very reliable*.

MR. T. M. RICKMAN, in supporting the motion, remarked that his friendship with Mr. Cates dated from 1852. Mr. Cates's last contributions to the R.I.B.A. Transactions had as a postscript a reprint of the application from the Architectural Association for the establishment of an examination in architecture. That application was drafted by Mr. Cates, Mr. Bayley, and the speaker at a meeting held many years since at Old Lyons Inn. Although somewhat pugnacious in disposition, no one had the highest interests of the profession more closely at heart than Arthur Cates, and while he spoke of himself as a drill sergeant, no one ever sat under him at an examination without gaining additional knowledge, nor left without increased hopes of future usefulness.

THE PRESIDENT endorsed all that had been said, and put the resolution, which was agreed to in silence.

THE LATE MR. FLEISCHER GREGG.

MR. A. GRAHAM, Hon. Sec., said he had also to announce, with much regret, the death of Mr. Fleischer Gregg, who had been a Fellow since 1870, and whose genial presence was always welcomed in that room. He had, like Mr. Cates, taken an active part in the examinations for many years past. A letter of condolence was also ordered to be sent to Mr. Gregg's relatives.

THE SOURCES AND GROWTH OF ARCHITECTURE IN EGYPT.

A paper on this topic, illustrated by over fifty lantern-slides from photographs and drawings by the lecturer, was read by Professor W. M. FLINDERS PETRIE, D.C.L. The lecturer observed that in no respect was our view of the origins of the arts more enlarged than in the architecture of Egypt. Ten years ago we were starting with the most highly-finished work of the Fourth Dynasty, the great pyramid of Khufu, and were groping in the dark for any clues to the growth of such surpassing construction. To-day it can be shown how every feature arose, and the adoption of stone for building can be dated to a single generation. The unwrought materials, which were everywhere to hand in Egypt, were palm-ribs, papyrus reeds, maize-stalks, and mud, together with palm-fibre roughly twisted. A striking sight of the beginnings of the building art may be seen any day in a nomad settlement on the desert edge. Side by side stand (1) a black goat-hair Arab tent, long and low, open always on the leeward side; (2) a tent fenced along part of the open side with a row of maize stalks; (3) a tent faced all along with maize; (4) a tent in a maize fence mud-plastered; (5) a dwarf wall of brick round the fence; (6) a high brick inclosure with a tent inside to roof it, the tent ropes stretching out through the wall; lastly, a roof is put on the wall, and the tent has disappeared. The early Egyptians seem, however, to have usually roofed their reed huts with

DORMER ROOFS.

to judge from the engraving of a hut on ivory, at the rise of the First Dynasty (4800 B.C.). The best feature is the strengthening of the corners of the hut by placing at each angle a bundle of reeds lashed together, as seen in the hut on the mace of Narmer. Here we have the origin of the torus-roll down the edges of the buildings, used till the latest stage of the architecture. The lashing together was always retained as an ornament, although the meaning of the roll was long lost. When papyrus stems were used for walling, instead of reeds or maize stalks, the top was rather weak if stripped of its leaves; hence they were retained and bound together, and the feathery tops served as a barrier above the wall, and finally as an ornament. Besides these reeds, palm-ribs may be seen still used for fences. They are set upright with all the leaves on them, at a few inches apart, and strengthened by other ribs interwoven diagonally each way, just below the weak part of the tip a line of ribs is lashed on with palm-fibre, and the loose, nodding tips serve as an effectual barrier to men and animals. The whole is finally plastered with mud up to the top lashing, and forms a very strong fence, which will last for many years. Such a fence or wall is figured as the front of an early shrine hieroglyph in the Fourth Dynasty.

TRANSLATED INTO STONE.

this became the constant feature of every Egyptian building, and this cornice retained to late times the palm-leaf ribbing which proclaimed its origin. We have preserved to us some views of simple shrines made of the natural materials, similar to the huts of maize stalks still used by the peasant. Here we note the roof sloping backward, and carried on far before the open front, so as to cast a shade, while it is supported on two front pillars of stalks. This was the original type of the rustic shrine adopted as a hieroglyph, and preserved to us from the Fourth Dynasty. The next material to be noticed is

MUD-BRICK.

one stage beyond the rough mud plastering. Brick houses and town walls remain from the prehistoric age, probably about 6,000 B.C., and a model of a town wall, with watchmen looking over it, belongs to a rather earlier time.

REGULAR BRICKWORK.

developed in use in the prehistoric time, and some arched brick tombs are probably of this age. There can, however, be no doubt of the barrel-vaulted passage in the tomb of King Neter Khety (found this year) belonging to the beginning of the Third Dynasty (about 4200 B.C.), and the magnificent brickwork and arching of the Fourth Dynasty (about 3400 B.C.) shows a long familiarity and free use of it.

Coming to

WROUGHT MATERIALS.

wood was the earliest in use for construction. The prehistoric graves were often lined with matting, and this was, in the later prehistoric, sometimes supplanted by a wooden lining. In the royal tombs at Abydos (4700-4500 B.C.) all of the wooden sides have been destroyed; but the evidences remain most clearly on the cross walls that were built to form cells around the wooden chamber for the offerings. These walls are plastered and whitewashed on the sides; but the ends are all rough brick, evidently built against a pre-existing timber wall, as the mud mortar has taken the cast of the grain of the wood wherever it touched it. The floors were usually of wood: one of the most complete shows the boards about 2 in. thick, resting on beams at the sides and down the axis of the chamber. The roofing was also of wood, as in some cases the casts of the rough-hewn ends of the roofing beams remain in the brick walls of the chamber. The author referred to the tombs of King Qa (4650 B.C.) and King Zet (4600 B.C.), and gave details of their construction. This form of construction is the forerunner of the greatest architecture of the pyramids. In the wooden chamber we find a stone chamber substituted, and the beams of the roof are of limestone or granite in place of wood. But the continuity of the general form and system is unbroken. The earliest royal tombs are plain pits roofed in, as in the prehistoric time. By 4650 B.C., a wooden lining forms a complete chamber, with brick cells around it, but no entrance. Under Den-Setni, 4600 B.C., an entrance stairway is added on the east side. Under Qa, 4600 B.C., the stairway is turned to the north. And the steps from this to

by the retaining wall of mud-brick, with a large lattice-work, the analogue of the mushrabiyyah

The first actual building of stone is the pit-

limestone courses are tolerably regular, varying

then adze-d over to level them. The joints have plaster in them, and also spread over the open joints on the face. The same thing also worked

and El Qula. These are all built of unhewn blocks found loose on the desert and cliffs. Each

been coated over with added masonry. The

Neter-Ket, probably second King of the Third

structure is derived from the wooden tombs in

derived from the dolmen and chambered barrow.

These structures are quite unknown in Egypt;

whereas the continuous stages between the pre-

historic pit-grave and the greatest and most

accurate structure ever built are clearly trace-

able. Even the preparation for a pyramid re-

some notes on the subject of

The wooden column appears as an octagon in the models found in the First Dynasty, and in the actual pieces he had discovered in the Twelfth Dynasty, and the copies of such in stone at Beni Hasan. The fluted wooden column is found in the First Dynasty tombs, and is well figured as a hieroglyph in the Fourth Dynasty. The most peculiar form of column is that derived from the tent-pole. This was the origin of the strange form known as the inverted bell capital in the Eighteenth Dynasty at Karnak. The earliest example known of the lotus column is in the Fifth Dynasty about 2600 B.C. The later examples of the Twelfth Dynasty, of the Eighteenth Dynasty, and of the Nineteenth and Twentieth Dynasties, show only a series of lamentable decadence. Each age in Egypt had its special excellence. In the Eighteenth Dynasty a delicate and freely flowing ornamental treatment; in the Fifth Dynasty the finest figure sculpture; in the Fourth Dynasty the grandest constructions; and in the First Dynasty the most lavish use of hard stones for hand objects and table furniture. Diorite, porphyry, and such materials were cut in thin and beautiful forms with a familiarity which was never known in later times. But every branch of art, when once it had fully grown, decayed rapidly, and the later work in many respects cannot bear comparison with the older triumphs.

A discussion followed, in which Professor George Addison, R.A., Sir L. Alma Tadema, F.R.S., Sir Martin Conway, Dr. Alexander Murray of the British Museum, Mr. R. Phibbs, F.R.S., Mr. Hugh Stannus, and the President took part, and a vote of thanks was accorded to Professor Flinders Petrie, who briefly responded.

"BUILDING NEWS" DESIGNING CLUB.

A SMALL HIGH SCHOOL FOR GIRLS.

THE plan of a school in the provision of schools for the children of the middle and upper classes has been very marked during the

most dependable and valuable information in this, as, indeed, in most things, is that which the architect finds out for himself. We do not, for instance, put forward the accompanying plans, contributed by the members of our Designing Club, as models of arrangement or as illustrating an ideal scheme. The designs must be taken on their merits as students' work, and as such they are of little value. The following were the designs.

A Small High School for Girls in the suburbs of a country town on a level site, with frontage facing S.W. The width of the plot is 100ft., with 200ft. depth. Economy of scheme desirable, and width of front not more than 85ft. The building is 15ft. thick, but the porch may, if desired, project 10ft. from the main façade. The style to be Queen Anne or Late Renaissance, in brick, with stone sparingly used, treated in a plain dignified manner. The building must not look like a Board School. The accommodation comprises: a school entrance and entrance hall; a lecture or central assembly-hall, 50ft. by 80ft., 14ft. 2 in. high, with platform at one end; a principal's room, 15ft. square or of that area, near the entrance, with ante- or waiting-room adjoining somewhat less in size; a cloak-room, with lavatory and w.c., to be available for visitors on special occasions, when the assembly-hall is used for prize distributions or concerts, &c., and the conveniences so arranged that they may be used by the principal. There are to be six classrooms, four for twenty pupils and two for twelve pupils each. A teachers' common room 18ft. by 14ft., with lavatory, cloakroom, and w.c. *en suite*. Three music-practice rooms, 10ft. by 10ft. each. The basement to have two entrances, one for tradesmen and one for pupils, quite distinct. Good cloak and boot-room accommodation, pupils' lavatory, and four w.c.'s. The housekeeper's rooms to be located at top of the building, with kitchen large enough to be used in connection with tea-service on special occasions, and to have a small service lift communicating with the assembly-hall on the ground floor and basement, from whence goods are sent up to the kitchen. The housekeeper to have one sitting-room and two bedrooms, with one large bedroom for three servants, who will require a separate meal and sitting-room. There will be half-basement floor, ground floor, first and second floors, and attics. The assembly-hall may, if desired, be a one-story building. The classrooms to be 15ft. high from floor to ceiling. The other rooms 11ft. high, and offices less if found desirable. The main staircase to be fireproof, and 4ft. 6 in. wide. A heating chamber in the basement for hot-water radiators in classrooms to supplement open fireplaces, and to warm assembly-hall, where no fireplace is required. Front elevation, section, and plan of each floor. Scale 8ft. to the inch. View optional. Cube at 1s., and state total cube and price. The return fronts quite plain, as the building comes between others, and light within site on all sides with this limitation only. Ground floor 3ft. above pavement. Posts and chains in front of paved forecourt. Size of paper 25in. by 18in.

We herewith illustrate the first and second plans. "Dan" comes first and "Gow Chrom" is placed second. In style the former of these two is not perhaps so refined as it might be, and there is a fantastic finish about the front gables, which are little better than shaped parapets, looking more imposing in elevation than they would do in perspective. The front cannot be classified as a representative of any recognised style; but its faults are not perhaps due to that, and anyhow its parts are made to balance, without despite to the established principles of planning. In plan the contrivances are out and away the best of any submitted. It is compactly arranged, and has much to commend it. The second design fails, for one thing, through a lack of simplicity in scheme, and for another by the locating of the platform with windows behind the lecture. In some sites this arrangement cannot be avoided, but in this case there was no need whatever for so placing the assembly-hall. The plain wall behind the platform is wanted for diagrams, maps, and blackboards. Faults could be easily found in both these chosen plans. The basement of "Dan's" plan would have a very dark corridor, and that in "Gow Chrom's"

scheme is not much better. The latter's elevation is more usual, and so lacks individuality, but it would look fairly well if capably detailed.

"Blom" may be reckoned third, with a striking façade—distinctly a frontispiece, but as such unusual, and made, no doubt, with an endeavour to do something with a marked contrast to the commonplace. The need of chimneys appears to be a minor matter, and rainwater pipes, which might be thought tiresome trivialities, are omitted too. The dome-capped towers flanking the ends are not indicated by any suggestions of the plan, and as to how far the roofing behind them is to be managed no one can say. The long flat curved central parapet or quasi-pediment is of questionable merit, and the turret in the midst is paltry and poor. A large semicircular portico makes up for the otherwise flat treatment. If this is the sort of thing that the "B.N.D.C." is to encourage, old stagers may think we are lost to all true principles of proportion and recognised ideals. Our answer is that his plan is better than some others, and if "Blom" is far from the right path, where purity of style governs the ways of men; we have told him of his fault, and hope he will take to heart our criticism, for with more judgment and sense of good taste he ought to produce far better and not less original work. "Absque Labore Nihil" sends in a most carefully worked-out set of plans detailed in almost every particular, showing how thorough he is, a quality which he will profit by some day. Nothing is shirked. We do not like his elevation very much, however, with its German-like features cast in a sort of florid Renaissance, with ugly window-heads to the rear building, much out of scale with those in the main block. His plan shows the hall divided off from the surrounding classroom by a corridor which would be very dark. "Robin Hood" sends the next best design. It is more original, but is wanting in structural fitness of form. Thus the canted big gable over the hall rises strangely over the arched windows below in an inartistic manner. The classrooms are isolated from the assembly-hall by being located on the first floor. "Cambria" is a workmanlike draughtsman, and his elevation looks like that of a school; but no attempt has been made to associate the assembly-hall with the classrooms, and we do not fancy the crude way shown for going direct into the big hall out of the entrance-vestibule is to be admired. The lift in the angle of the room destroys the tie of the walls, and the lift-cage would be too small to be of any real use.

"Jolanthe" has a far better plan, though the entrance-hall is cramped and poor in effect. The class-rooms are properly arranged and fitted, while the music-rooms are nicely set out for isolation, though their ante-lobby is very dark. The front elevation is exceedingly commonplace and deficient in interest. "Jove" is still an admirer of the School Board Queen Anne style in the plainest of plain modes. The building, in fact, looks too much like a board school. His portal is poor in proportion, not an essential feature of the style. The plan is not good really, and is overdone with the big staircase, off which a trifling gallery in the assembly-hall is shown. "Jove" draws neatly, and shows ugly doors in the section, while making them the chief attraction. "Pierrot" sends a very crude plan and well-balanced elevation, not replete with pleasing detail, for it is lumpy and poor. "Quercus" might have made his elevation rather pretty as well as dignified, with more care and better drawing. As it is, the result is inadequate and restless-looking, which is a pity. The classrooms upstairs are ill-considered in themselves, with the light behind the pupils in all cases seemingly, or else full in their faces. The perspective is rough and careless. "Brush" has a design somewhat like a Salvation Army barracks, flagstaff and all. "Pencil Point" backs his platform on to the main stairs, with borrowed lights between, which surely cannot be good. The hall is at the back, while the classrooms are upstairs on two floors in the front. The elevation is palatial in idea, done in Georgian Classic, not without a sense of refinement, however, and certainly with care, though the oval light in the pediment would be very inadequate to so large a kitchen, even with the rear dormers, and we are not so sure as to the shape of the room behind the pediment. "1901" adopts a similar type of building, but with less dignity, and one classroom tacked on to the end of the assembly-hall on one side very awkwardly. Another Classic design is by "Zisca," and

somewhat more suitable plan. The author ought to have done better, but the doorway and contrivance under pediment over it are too ugly for words. "Put M Kann" is the author of a barrack-looking house, unredeemed by the wall pillars, with big eggs half-way up, and thinking the facade. "Tom Thumb" comes next, more like a hospital than a ladies' school. His classrooms on the first floor are improperly set out, the teacher being sideways to the scholars. "Taffy" has a highly involved scheme and ugly front. "Perseveranza" we cannot describe architecturally, with windows chanceways along the elevation, while the plan is almost as haphazard. "Primus" has spared no pains, but he wastes space over his entrance-hall surprisingly, and gives us rare thick interior walls for a brick building. "Nemo" is not economic, and covers a needlessly large area, and so has extensive corridor space to pay for. He sends a set of drawings in lieu of one sheet. "Brutus" comes next, and then "Maori," who is represented by a mounted tracing.

HOW TO ESTIMATE: OR, THE ANALYSIS OF BUILDERS' PRICES.—VIII.

By JOHN T. REA, F.S.I., Surveyor, War Dept.

BRICKLAYER. — *Memoranda.*

SIZE AND WEIGHT OF BRICKS.

Kind of Brick.	Size.	Weight.	Weight per Thousand.
	in. m. m.	lb.	cwt.
London stock	8 1/2 x 4 1/2 x 2 1/2	7	61
Red kiln	8 1/2 x 4 1/2 x 2 1/2	7	63
London red	8 1/2 x 4 1/2 x 2 1/2	6	56
Welsh fin	9 x 4 1/2 x 2 1/2	8	65
Staffordshire paving	9 x 4 1/2 x 2 1/2	6	55
Dutch clinkers	6 1/2 x 3 x 1 1/2	1 1/2	14

Bricks absorb about 1/4th of their weight in water after 24 hours' immersion.

13 brick, or 14 in., is the standard thickness of brickwork. 16 ft. of brickwork is equal to 10 bricks.

1 cubic yard = 350 ..

1 reduced rod of brickwork:—

- = 16 ft. x 16 ft. = 272 ft. super. of standard thickness of brickwork.
- = 48 ft. super. of 1 brick thick.
- = 16 ft. x 16 ft. = 36 ft. cube, or
- = 11 yards cube.
- = 4,300 stock bricks laid in mortar, gauged four courses to 1 ft. high.
- = 5,370 stock bricks laid dry in walls.
- = 4,900 stock bricks laid dry in walls.
- = about 14 tons in weight.

Stack of bricks.

- = 1,000 new bricks closely stacked, which occupy 55 ft. cube.
- = 1,000 old bricks cleaned and loosely stacked, which occupy 72 ft. cube.

100 bricks make one cart load.

50 " " barrow

1 ft. super. of reduced brickwork requires 16 bricks.

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Description.	Per rod.	Per yd. cube.	Per ft. cube.
Brickwork in stone lime mortar, 1 to 2, materials and labour	£ 8 8 d.	£ 8 8 d.	8 8 d.
1 to 3,	13 10 6	1 3 3	0 10
1 to 4,	13 12 6	1 4 0	0 10
If built in blue has or Abertaw lime,	0 10 0	0 1 6	0 0
Brickwork in cement mortar, 1 to 2, materials and labour	14 16 1	1 6 2	0 11
1 to 3,	14 7 0	1 5 4	0 11
1 to 4,	14 5 0	1 5 2	0 11
If brickwork is in backing to masonry, add to foregoing	0 18 0	0 1 8	0 0
Brickwork circular on plan over 14 ft. radius,	0 12 3		
1 to 3,	1 3 7		
Extra for brickwork worked fair both sides,	0 3 0		
Underpinning walls, in places less than 16 ft.			0 1
Chimney shafts not exceeding 2 ft. above roof,			0 1
Old brickwork pulled down, cleaned and stacked, including scaffolding	2 0 0	0 2 6	0 1
Moulded terracotta			0 0
1 finished			9 0
Hoisting and setting ditto, including filling hollow parts with cement concrete			1 8

4 in. stock brick walls in lime mortar per yd. sup. s. d.

Brick-roughing in lime mortar, laid flat

quarters measured in 3 9

Ditto ditto on edge ditto 2 9

Lime whitening on walls, &c., 1 coat 0 1

Ditto ditto 2 coats 0 1 1/2

4 in. cement concrete bed for laying

paving, &c., on 2 0

4 in. ditto ditto 2 7 1/2

Flashed bed of 4 in. cement for tile or

brick paving 1 6

Extra, forming gutters in concrete .. per foot run 0 1 1/2

FACINGS, ETC.

(Extra only to the foregoing Brickwork.)

Facings of 4 in. white glazed bricks per yd. sup. s. d.

Joints of brickwork struck fair for inside

work, lime whitening, &c. 0 2 1/2

Facings of best picked stocks, finished

with a neatly-struck joint .. per foot sup. 0 1

Ditto of best white Portland, ditto ditto 0 3

Ditto of Lawrence's Bracknell best red

bricks, ditto 0 3 1/2

Ditto of best red Fareham, ditto 0 4

Add to foregoing if in bands not ex-

ceeding three courses in height 0 0 1/2

Brickwork with battered face 0 1 1/2

Brick panel (measured around panels) per foot run 0 0 1/2

ARCHES.

Face and soffit of arches to be measured.)

Rubbed and gauged work, with best rub-

bing or moulded bricks, set in cement,

and jointed in putty, extra only to price

of ordinary brickwork in mortar .. per foot sup. 1 10

Arched arches of kiln-burnt bricks, the

ordinary brickwork facings been paid

for in addition, and ditto 0 4 1/2

Extra labour, cutting, and waste to

relieving arches No. 1 7

Trimmer arches of kiln-burnt bricks,

half-brick thick, in cement mortar,

including all cuttings, materials, scaf-

folding, and labour .. per foot sup. 0 7

CORNICES.

Common brick cornices, including neck-

ings, the quantity being measured as

brickwork, and the facings and point-

ing also in addition, girth measure,

materials and labour .. per foot sup. 0 6 1/2

Overhaul at eaves, one course .. per foot run 0 1

COPINGS.

Brick on edge coping in cement, flat

measure, the brickwork and facings

being measured in addition .. per foot sup. 0 6 1/2

Semicircular saddleback red terracotta

coping for one-brick walls, set and

jointed in mortar .. per foot run 0 4 1/2

Ditto for 12-brick walls, and ditto 0 10

Extra only for angles, junctions, and

returned ends for one-brick wall .. each 1 1

Ditto ditto 12-brick wall 1 9

TERRACE COURSES.

Extra only for white or blue splayed

brick plinth course, 2 1/2 in. projection

the cubic quantity being measured as

brickwork and also the facings and

pointings in addition .. per ft. run 0 3

Extra only for angles to ditto .. each 0 4

FLAT ROOFS AND TERRACE FLOORS.

Extra only for bull-nose or splayed angle,

straight the cubic quantity being

paid for as brickwork in addition .. per ft. run 0 1 1/2

Stops or mitres to ditto each 0 3

Extra only for moulded bricks, straight

the cubic quantity being paid for as

brickwork in addition .. per ft. sup. 1 0

Stops or mitres to ditto per inch run 0 1

DESCRIPTION.

Sound hard well burnt picked stock brick paving, materials and

labour, laid flat .. per yd. super

Ditto ditto on edge 3 5

Dutch or Adamantine clinkers on edge

Staffordshire vitrified blue paving bricks, with bevelled edges, laid flat

Best Staffordshire tiles or quarnes, 6 in. by 6 in.

Ditto 12 in. or 12 in. tiles

Encaustic tile paving, ordinary pattern, 6 in. by 6 in.

WATERPROOFING.

Damp-proof or continuous air course of

vitrified stoneware, glazed air-bricks,

in lengths to suit thickness of walls,

and bedded in cement, 1 in. thick .. per ft. sup. s. d.

Extra only for angles 0 1 1/2

Clondge's patent fine-gritted asphalt

Seyssel damp-proof course, 1 in. thick

.. per ft. sup. 0 1

Mineral asphalt damp-proof course, 1 in.

thick per yd. sup. 2 0

Pitch, tar, and sand ditto, ditto 1 0

Slate damp-proof course of Countess or

Duchess slates, set in cement, double

course, breaking joint per ft. sup. 0 0

Pointing to face of slate or asphalt

damp-course per ft. run 0 1

FIREWORKS.

Setting only in new work grates and

stoves, not exceeding 40 in. in width,

materials and labour each 0 0

Ditto, 40 in. to 50 in. in width 6 0

Ditto, ranges with ovens or boilers, under

40 in. in width 7 0

Ditto, ditto, 40 in. to 50 in. ditto 10 0

Ditto kitcheners complete, with firebricks

and lumps, &c., under 40 in. in width 25 0

Ditto ditto 40 in. to 50 in. in width 30 0

Flue linings to chimneys, with

Stourbridge firebricks, 4 1/2 in. thick, set

in fireclay per ft. sup. 1 4

Fireclay unglazed flue linings, 1 in. thick,

in 12 in. lengths, and 10 in. internal

diameter, and setting in fireclay .. per ft. run 1 2

POINTING.

Flat struck joint, and neatly jointed in

stone lime mortar per yd. sup. 1 7

Ditto ditto in coal ash or blue has 1 8

Ditto ditto in cement 1 9

Raking and pointing with cement in lead

flashings per ft. run 0 1

Ditto ditto in stepped flashings 0 1 1/2

Filleting, not exceeding 3 in. wide, with

hair mortar 0 2

Ditto ditto with cement 0 3

Raking and pointing round frames with

coal-ash mortar per yd. run 0 2

Ditto ditto with cement 0 3

Bedding and pointing round frames,

under 2 ft. super. No. 1 2

Ditto ditto 2 ft. to 36 ft. super. No. 1 6

BEDDING.

Level and prepare old walls to receive

new work per ft. sup. 0 1

Bedding and pointing frames in hair

mortar per yd. run 0 1 1/2

Ditto in hair mortar and pointing in

cement 0 2

Bedding plates on top of walls in mortar per ft. run 0 1

Ditto ditto in cement 0 1

Bedding window boards in mortar, and

pointing round each 0 6

CUTTING AND FINISHING.

Rough cutting and waste, straight, for

2 sides, skewbacks, &c. .. per ft. sup. 0 1 1/2

Ditto circular, over arches, curved ramps

.. .. . 0 2 1/2

Fair cutting and rubbing, face work 0 3

Skewback cutting, 5 in. wide .. per ft. run 0 1

Rough cutting birdsmouth or squint

quoins 0 1 1/2

Fair cutting ditto 0 4

Rough cutting for 4 in. chase 0 4

Cut for and run edges of 6 in. flashings in

cement 0 1

Ditto 4 in. ditto 0 1

Cutting toothings, and bonding new

brickwork to old, in lime .. per ft. sup. 0 2 1/2

Ditto ditto in cement 0 1 1/2

y-Bont (Ruabon, $2\frac{1}{2}$ miles), Mr. J. C. Edwards; Hafod Ruabon, 2 miles), The Ruabon Coal and Coke Co., Ltd.; Tatham Works (Ruabon, 2 miles), Mr. H. R. Bowers; the Ruabon Brick and Terra-cotta Works, the Ruabon Brick and Terra-cotta Co., Ltd., the Ruabon Terra-cotta Brick and Tile Works, Messrs. Monk and Newall; Wilderness Terra-cotta (Wrexham, 2 miles), Mr. C. S. Clark; Vron Fire Brick Works (Wrexham), the Vron Brick Co.; and Cae Llo (Wrexham, 5 miles), the Brynno Steel Co., Ltd. Millstone Grit borders the coalfield on the west, extending from Minera to the river Dee, covering an area of about 15 square miles. North-east of Llangollen some rocks underlying the Grit and overlying the Carboniferous Limestone, and recognised as Yoredale Beds, are grouped with the Millstone Grit, both together forming a series known as the "Cefn-y-Fedw Sandstone." This is subdivided as follows:—(1) Aqueduct Grit, so called from the Cysyllty Aqueduct, which conveys the Ellesmere Canal over the river and vale of the Dee. This grit has a distinct lithological character, and a fairly uniform thickness over a large area; so *BIRMINGHAM NEWS* "Quarry List," 58, 240); it has been quarried in the neighbourhood of Llangollen for over 500 years or more. Llan Eglwst (Vale Crucis) Abbey, 2 miles from Llangollen, a Cistercian house founded in the 13th century; Caernarvon (Caer-yn-Arfon) Castle, built in 1283; and Bristol Docks are of this Aqueduct Grit, the tool-marks in the dress-

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lowest division of the Wenlock rocks in this county. They consist of flagstones, grits, and sandstones, the whole attaining a thickness of about 3,000ft. Sir A. Ramsay considered that these grits, &c., were only a local variety of the shales, for the grits frequently thin out and pass into strata of a shaly character, instead of persisting as sandstone, and being overlapped by the shale. The Denbighshire grits are well developed between Llanbadar yn Mochar and Llangollen. They yield stone chiefly used for walling and rough dressings, and are of local importance only. Andesite is quarried at Henare Glyn, 3 miles, the Ceiriog Granite Co., Ltd., and mined at Gwydy-Glyn by the Glyn Granite Co., Ltd. Felsite is quarried at Dinas Bettws-y-Coed, 2 miles by the Denbighshire County Council. The low grounds and flatter parts of the hills are overspread by glacial sand, gravels, and Boulder clay. Between Aberczele and Llandulasa terrace of Glacial drift rests against the hill-sides facing the sea. Its greatest thickness is from 150ft. to 200ft.; it slopes gradually towards the sea. The same bed of drift is found along the hills facing Colwyn Bay, and those inclosing the Vale of Clwyd. The boulder clay is worked for brick-making.

THE SURVEYORS' INSTITUTION.

VISIT TO SOUTHAMPTON.

DURING the coming week the members of the Surveyors' Institution will assemble at Southampton, at the invitation of the Provincial Committee of the district, for the purpose of reading and discussing papers of local and general interest, and of visiting places in the locality specially attractive to the various branches of the surveyors' profession. The first day, Thursday, June 30, will be devoted to the reading of papers: (1) on "Southampton: Past and Present," by Mr. W. Beaugh Hill; (2) on "The New Forest," dealing exhaustively with its history, geology, forestry, topography, botany, zoology, and entomology, as well as with its tenures, customs, and forest laws, by Mr. F. J. Smith; (3) a paper on "The Liability for Farm Fires Caused by Sparks from Railway Engines," by Mr. C. P. Hall, agent to the Duke of Bedford. It is not generally known how great is the damage done by railway-engine sparks in agricultural districts, and how, almost completely, the companies are exempt from liability. The fourth paper, which will be read if time permits, is by Mr. Philip E. Pilditch, on "Recent Proposals for the Amendment of the Law as to Ancient Lights," a subject of especial importance to surveyors and architects in London. The members are invited by the Mayor to luncheon on this day, and in the evening will dine together, meeting many distinguished guests at the South-Western Hotel.

The second day will be occupied by excursions (1) to Alum Bay to inspect the well-known geological formations; (2) to the New Forest, and (3) to Winchester, where the Dean, the Bursar of the College, and the city surveyor have consented to conduct the party through the respective places of interest.

At the annual meeting of the Auctioneers' Institute Mr. W. Bennett Rogers has been unanimously elected president in succession to Mr. William A. Daw. A provincial meeting of the institute will be held in Edinburgh during the autumn.

Mr. Henry Edwin Foster, of The Grange, Totton Heath, succumbed on Friday to an operation for cancer in the throat. The deceased was a Fellow of the Surveyors' Institute, was Master of the Honors' Company in 1892, and senior partner of the firm of Messrs. Foster and Cranfield, auctioneers and surveyors, of the Poultry. He was 57 years of age.

On Tuesday week the Bishop of Norwich attended the reopening of Frenze Church, on the Frenze Hall Estate, some three miles from Diss. The work, which has been carried out by Mr. William Lummer, builder, Dickleburgh, from designs of Messrs. A. R. Barker and Son, architects, Strand, London, includes a new oak roof, covered with the old tiles, restoration of the pulpit and reading-desk, new altar-rail, new floor, with a foundation of concrete, new west window, new entrance door, &c. All the monumental slabs on the floor have been taken up and rearranged, and an altar stone found in the body of the church has been removed to serve as a Communion table. The exterior of the edifice has been repaired, and two new buttresses provided. The work has been carried out at an expense of between £300 and £400.

OBITUARY.

The death occurred in London, at the end of April, of Mr. HENRY BRUNTON, M.P.E.C.E., who constructed for the Japanese Government between 1870 and 1880 a series of lighthouses round the coasts of the chief islands. Mr. Brunton was granted by the British Government the use of the despatch steamer *Maeda*, and in that he and his staff made a tour round the coasts of Japan, visiting some twenty sites and making the necessary surveys and calculations. In ten years' time he had built fifty lighthouses, and had arranged a complete Government department for their maintenance. He further reported on, and made the plans for, the removal of the bars at the mouth of the rivers, on which the Government officials are even yet working. His design for the harbour in Yokohama Bay was thought too expensive by the Government at the time, but that subsequently adopted was on his lines. He also inaugurated the telegraph system in Japan, and introduced methods of constructing bridges, buildings, &c., to withstand earthquake shocks. On the completion of his high house work he returned to this country.

CHIPS.

Colonel Hepper, representing the Local Government Board, held an inquiry at Falmouth on Friday concerning an application by the corporation for leave to borrow £1,754 for street improvements and £110 with which to erect a sanitary convenience in Kimberley Park. Of the £1,754 the council contemplated spending £1,280 on footpaths. There was no opposition to either scheme.

In reply to Dr. Farquharson, the First Commissioner of Works, Mr. Akers-Douglas stated on Friday that he had taken steps for the acquisition of premises immediately adjacent to the National Gallery, so as to secure the complete isolation of that building. Parliamentary powers are needed for the purpose, and a Bill has been for some time before the House on the subject, and is now awaiting a second reading.

An interesting discovery has been made in Peterborough Minster precincts. In the course of removing the rubble which filled one of the many pointed arches in the wall at the eastern extremity of the Palace-gardens a window of beautiful tracery was revealed. The stonework was in an excellent state of preservation, and only a small portion of one column was missing. It is intended to unseal the neighbouring arches in the hope that similar archaeological treasures may be found. The wall originally formed part of a passage leading from the cloisters to the monks' kitchen.

Beyond the offer at the Mart last week of four big Scotch estates and a few residential places in the country, the transactions presented few features of interest. Property consisting of the residential class situate in the near suburbs was put up in abundance, and the bulk of it sold well. The sales at the Mart during the week, as registered at the Estate Exchange, amounted to £251,793. The sum registered in the corresponding week of last year was £185,728.

At the annual meeting of the Incorporated Church Building Society, held on Friday, it was reported that the Society had been instrumental in the erection of 2,346 churches, and in assisting in rebuilding, enlarging, or otherwise improving the accommodation in 6,188 other churches or consecrated chapels-of-ease. The actual amount of money intrusted to the Society, and used in making grants towards the objects named, had reached £892,428. The income of the Society for the year had amounted to £5,402, and during the same period 31 grants had been made for new churches, amounting to £8,035.

The village of Lingfield, in Surrey, has already made a start in erecting a memorial institute, which comprises a hall to seat 250 persons, with stage and retiring-rooms; also reading and smoking-rooms, with kitchen. The building is being erected at a cost of £1,000 by Mr. E. G. Stamford, of Lingfield, the architect being Mr. Herbert M. Caley, of Tunbridge Wells.

A Select Committee of the House of Commons declared the preamble of the West Cumberland Electric Tramways Bill proved on Tuesday. The line will be worked by electricity, and it also will have power to erect generating stations, from which the company will supply electricity for public and private purposes within certain limits. The tramways will begin on Cleator Moor and end at Silloth. The gauge will be 4ft. 8½in., and the line will be 31 miles in length. It will mostly run along public roads, and will serve 15 villages and five towns.

The new offices of the Whitley and Monkseaton Urban District Council, which occupy a prominent site in the principal thoroughfare, will be formally opened on Saturday, June 1.

PROFESSIONAL AND TRADE SOCIETIES.

EDINBURGH ARCHITECTURAL ASSOCIATION. The members of this association on Saturday visited Dundee, where, through the kindness of Colonel Hunt, of Pittencrieff, they were enabled to inspect the old House of Pittencrieff, with its various old articles of furniture, pictures, &c. Mr. John Houst, architect, Dunfermline, acted as leader, and read descriptive accounts of the house and the picturesque glen in which it stands. The party then drove to Pittferran, where they were received by Sir Arthur Halkett, Bart., by whose courtesy the splendid old pile was examined, and who gave a most interesting account of the house, and recalled how the house had been inhabited by the Halketts of Pittferran since 1437.

LIVERPOOL ARCHITECTURAL SOCIETY. The fifty-third annual report of the Liverpool Architectural Society shows that the society is steadily increasing in size and importance. The membership now amounts to 146, and the accounts show that there is a handsome credit balance. Among those who read papers during the session were Messrs. Alfred Darbyshire, Halsey Ricardo, Baillie Scott, Beresford Pitt, A. W. Paterson, and A. S. Flower. The Society hopes to be incorporated before the commencement of next session. At the annual meeting Professor Simpson was re-elected chairman, Mr. Dod hon. treasurer, Mr. Dickenson hon. librarian, Messrs. Hartwell, Grayson, and G. W. Fraser joint hon. secretaries, and to the council were elected Messrs. Deacon, Eccles, Hartley, Ould, Strong, Thicknesse, Willink, Hinde, and Thornely.

The corporation of Windsor have begun the demolition of seven historic houses which were good examples of the architecture of the reign of Charles I. The houses adjoin the present vicarage of Windsor, and also adjoin a large piece of waste Crown land which was offered to the corporation some time ago. Upon this and the site rendered vacant by the demolition of the houses, it was proposed to erect a Volunteer drill-hall, as a memorial to the late Prince Christian Victor, but the project fell through owing to lack of support. The corporation having condemned the houses—their own property—as unfit for human habitation, their destruction is being proceeded with.

A select committee of the House of Commons has, after three days' hearing, passed the preamble of a Bill promoted by the Bexley Urban District Council for constructing tramways beginning on the far side of their district, and connecting with the Woolwich and Greenwich tramway of the South-Eastern Tramway Company, in order to form a continuous line to London, the tramways to be worked by electricity on the overhead trolley system.

The directors of the London and North-Western and North-Eastern Railway Companies have placed the order for the remainder of the alterations at Leeds New Station in the hands of Messrs. William Nicholson and Son, South Brooke-street, Leeds. The works comprise additions to the refreshment-rooms, waiting-rooms, and offices. The same firm carried out the recent extensions both east and west of the station. These occupied more than four years. The alterations now to be undertaken will complete the original scheme of the improvement.

A committee of the House of Commons has passed the preamble of a Bill to enable the corporation of Blackpool to construct additional tramways, and carry out other improvements, including the construction of a line from Waterloo Drive along Middle-lane to the boundary of the borough at Marton.

A new isolation hospital, which has been erected at Malvern at a cost of £10,000 was opened on Monday by Mr. Willis Bund.

The Housing Committee of the City Council of Liverpool have accepted the tender of Mr. Hugh Williams for land in Bostock-street. The fee simple is to be sold to Mr. Williams at the price of 12s. 6d. per square yard, subject to the erection of four-roomed dwellings thereon.

Messrs. Wm. Potts and Sons, clock manufacturers, of Leeds and Newcastle-on-Tyne, have just completed an hour striking-clock with illuminated dial, near Fort William, N.B., and have a new illuminated hour striking-clock for Annan Town-hall, N.B. They have also received instructions from the Leeds Corporation to fix a new illuminated clock at their Armley Branch Free Library, and a first-rate clock with all gunmetal wheels cut on engine, and steel pinions hardened and tempered, main wheels 20in. diam. for the Cambridge quarter and hour striking parts, and 15in. diam. for the gong part, for the Midland Counties.

Building Intelligence.

LEEDS.—The trustees of Oxford-place Chapel, Leeds, are about to proceed with the erection of new buildings and a tower adjoining the present structure, and occupying the vacant plot that exists to the north and fronting the town-hall. The tower will rise to a height of 120ft., and be carried out in the same style of Italian Renaissance that characterises the present buildings. At the back an addition is to be made of an octagonal-shaped room adapted for the purposes of a girls' club. There will be three floors of offices adjoining, and the material used in the erection of the buildings will consist of brick faced with stone. The work is in the hands of Mr. G. F. Danby and Mr. William H. Thorp, architects, of Leeds.

LIVERPOOL.—The Archbishop of York, on Saturday, opened the first section of the Church House in Lord-street and South John-street, Liverpool. The present scheme was adopted some years ago, and an extensive piece of property in a central position was purchased for £50,000. A contract was entered into for the erection of the present portion for about £15,000, of which £1,600 has still to be raised. The second part of the scheme will involve an additional expenditure of £25,000. The section opened on Saturday comprises a large board-room, committee-rooms, newsrooms, and offices, where the whole work of the diocese will be transacted. In addition, the Bishop Ryle Library, the nucleus of which is formed by the library of the late Bishop and bequeathed for the purpose, finds a home in the building, where various diocesan societies are also housed. The building has been erected from plans by Mr. G. Bradbury, of Liverpool, the diocesan architect.

LONDON COUNTY COUNCIL. At Tuesday's meeting of the Council the Technical Education Board brought up a report recommending the purchase for £45,000 of a site at the corner of Southampton-row and Orange-street, Bloomsbury, for the erection of a new building for the Central School of Arts and Crafts now housed in Regent-street. The recommendation was adopted without discussion. A recommendation of the same Board for the establishment of a day training college for teachers in connection with the University of London, at an estimated annual cost of £2,800, was, after discussion, carried by a large majority. It was agreed to erect additional buildings at the Farnfield Home for female inebriates to accommodate 90 additional inmates, and the modified tender of Messrs. Potter Brothers, the lowest received, was accepted for the works at £17,660.

MALDENBURY ABBEY CHURCH.—A meeting of the Restoration Committee was held at the Town Hall, Chippenham, on Thursday in last week, the Bishop of Bristol presiding. The architect, Mr. Harold Brakspear, reported that the contractors had completed the repairs of the flying buttresses of the south side, with the exception of the double buttress at the west end, which they were unable to repair with safety until the south-east corner of the ruined aisle had been made good. As the restoration of the aisle, forming part of section 2, is not comprised in the existing contracts, it was resolved that, in order to give the required support to the buttress, the reconstruction of such corner should now be effected, instead of being carried out with the rest of the aisle at a later date. This resolution followed an announcement that the subscriptions, received and promised, amounted to £3,217 17s. 9d.

SHEFFIELD.—The Western-road Board School, Crookes, was opened by Sir Richard Jebb, M.P., on the 15th inst. The school has been erected from the plans of Messrs. Holmes and Watson, selected in competition. There are eleven classrooms arranged round a central hall, lighted by side and end windows as well as from the roof. Special air ducts have been constructed, and the classroom windows are fitted with Mellows' Hopper ventilators. The heating apparatus has been provided and fixed by the Brightside Foundry Company, while the ventilation is assisted by means of steam coils fixed in the turrets to which the extraction shafts from each room converge. The plan of heating is on the low-pressure hot-water system. There are rooms for manual work and practical cookery in a semi-basement. A simple style of architecture has been adopted, and the elevations have been made subservient to practical educational purposes. Stone from Stoke Hall quarries has been used externally, and the roof is of black Westmoreland slates with Mellows' patent glazing for the sky-

lights. The contractors were Messrs. Murgatroyd and Son, and Mr. J. Laidler has acted as clerk of works. The cost has been £12,700, exclusive of site, and 900 school places are provided.

SHIPLEY.—Memorial-stones were laid on Saturday last in connection with the erection of a school-chapel for the Wesleyan denomination in Hall Royd, Shipley. Mr. G. F. Danby, of Leeds, is the architect. His plans provide for a central assembly-room, 58ft. long by 34ft. wide, which will be capable of seating 400 persons on the ground floor. A gallery extending round three sides of the building will seat 250 more. At one end will be the rostrum and choir gallery. From the ground and gallery floors access will be obtained to twelve classrooms. All will be arranged to afford easy communication with the chapel, eventually to be built on the land adjoining. The cost is estimated at £3,000. The principal contractors are Messrs. Deacon and Son, Shipley, and Messrs. H. and T. Riddiough, Cross Hills.

STONE, KENT.—The City of London Lunatic Asylum at Stone, Kent, has recently been partially reconstructed, and many new buildings have been added, all from designs prepared under the direction of Mr. Andrew Murray, F.R.I.B.A., the City surveyor. On Saturday, in the presence of the Lord Mayor and Sheriffs, the Bishop of Rochester dedicated the new chapel, a detached building seating 300, and consisting of nave, chancel, and transepts, and having stained-glass windows all round, and flint facing on the outside of the walls. The asylum has now room for 500 patients. Not only are there new buildings, but the old have been rearranged. A separate hospital for women, a laundry block, a mortuary, laboratory, pathological room, more scientific drainage, and electric machinery of 165H.P. supplying force in various departments and light to 1,150 lamps are among the innovations. The interior fittings of the chapel, including pulpit, organ, sittings, and doors, are of solid oak, polished by Ronuk, Ltd. Altogether the improvements have cost £85,000.

TOTTENHAM, N.—The members of the Metropolitan Asylums Board made an official inspection on Saturday of the new permanent buildings of the North-Eastern Hospital recently erected on a site almost midway between West Green and St. Ann's-road stations. The original North-Eastern Hospital consists of a group of temporary buildings hastily erected in 1892, in face of an epidemic of scarlet fever, and intended only to last for one year. The area of the site was then 19 acres, but additional land has since been purchased, and the total is now about 33 acres, including a recreation ground. The new buildings which form the first section of the proposed permanent hospital consist of an administrative block, laundry, staff quarters, medical superintendent's and steward's houses, porter's lodge, receiving and discharge rooms, mortuary, dispensary, four diphtheria and enteric blocks, two isolation blocks, and tank tower. The normal number of beds in the reconstructed hospital will be 548. The new buildings provide for diphtheria and enteric patients and eight isolation beds. They also include accommodation for the entire staff of the future hospital. The buildings have been erected by Messrs. McCormick and Sons, whose contracts include all engineering work except kitchen and laundry fittings. The main contract was for £113,642, and the laundry was an additional £8,865. The medical superintendent's residence was built by Messrs. Wm. Johnson and Co., of Wandsworth Common, at a cost of £1,968. The architects are Messrs. A. and C. Harston, of Leadenhall-street, E.C.

TURRO.—The Cathedral Executive Committee on Saturday had before them a letter from Mr. J. H. Dennis, who recently offered to provide the cost of the central tower, stating he would transfer to the Earl of Mount Edgecumbe and the Bishop £15,000 worth of London and North-Western Railway stock to pay for the tower, which the architect, Mr. Frank L. Pearson, and the builder estimated would cost less than that. The secretaries were asked to thank Mr. Dennis for his enlarged promise, and the work will be proceeded with as soon as possible. A committee was appointed to select subjects for the statuary around the cathedral. It was mentioned that niches had been provided for eighty-seven figures, the total cost of which was estimated at over £1,500. The figures will cost from £5 to £50 each.

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ILLUSTRATIONS.

ST. CATHERINE'S COLLEGE, CAMBRIDGE. A HOUSE AT PINNER. A HOUSE AT BARNT GREEN, WORCESTERSHIRE. CONGREGATIONAL CHURCH AND SCHOOLS, LEEDS. "BUILDING NEWS" CLUB DESIGNS FOR A SMALL HIGH SCHOOL FOR GIRLS. TWO ITALIAN RENAISSANCE TABERNACLES.

Our Illustrations.

ST. CATHERINE'S COLLEGE, CAMBRIDGE:
GATEWAY IN QUADRANGLE.

ST. CATHERINE'S COLLEGE is, perhaps, one of the most interesting of the Cambridge colleges. It was founded by Dr. Robert Woodliffe, Provost of King's College, Cambridge, in the middle of the 15th century, although no part of the original building now remains. The plan forms three sides of an irregular square, with quadrangle in centre, and with the gateway illustrated leading from quadrangle to Queen's-lane on the west side of the college. It is brick-built with stone dressings, except the gateways, which are stone; the roofs are tiled. The college sets back some little distance from the road, and is separated from it by a row of fine elm-trees, which adds greatly to its quiet yet dignified appearance.

A. J. PITCHER.

HOUSE AT PINNER.

The front of this house faces the south, and as the plot of ground is 60ft. wide, an attempt has been made to keep the plan as compact as possible. The hall and porch are the principal features on the ground floor, the latter having a massive oak door, with wrought-iron hinges. On the first floor and others are six large bedrooms, one dressing-room and a box-room, bath-room, &c. The house is now in course of erection, and is being built for Mr. John H. Shankland, who has also purchased a plot to the back to have more garden accommodation. The materials are local facing bricks, the upper portions of the walls being cement rough-cast, and the tiles are being supplied by the Brosley Tilers Co. The woodwork will be painted white throughout. Messrs. G. and J. Waterman, of Watford, are the builders, and the plans have been prepared by Mr. A. N. Prentice, A.R.I.B.A., the architect.

HOUSE AT BARNT GREEN.

This house, which we illustrate from Messrs. Bateman and Bateman's designs, was arranged in plan to catch as much sun as possible, and for the principal rooms to command the extensive views from the site, including the Bredon and Malvern hills. The materials proposed for the exterior finish were Bath stone with roughcast and Colley Weston stone slates, the chimney shafts being of old bricks. Internally, oak would be used as far as funds permitted. The drawing is at the Royal Academy.

CONGREGATIONAL CHURCH AND SCHOOLS,
WOODHOUSE LANE, LEEDS.

This drawing, which we illustrate, is hung on the line at the Royal Academy. Owing to the migration of the population from the centre of the city to the suburbs, it was decided to sell the church in East Parade, and erect

another one, with more modern requirements, in a residential neighbourhood, and the designing and carrying out of the same was intrusted to Mr. G. F. Danby, architect, of Park-row, Leeds, who has produced a design and plan well suited to the admirable site purchased. Triangular in form, the ground has an area of 2,700 square yards, and the buildings comprise a church, capable of seating 750 worshippers, composed of wide nave, narrow aisles, and chancel. In the latter will be placed the choir, with organ-chamber on one side. At the junction of the streets an open porch is placed. This forms one of the main entrances, leading to a vestibule, over which is placed a seven-light traceried window, terminating in a gable, with small turrets at the angles. At the junction of the nave and transepts next Woodhouse-lane the tower, with spire, rises to a height of 130ft. In the lower stage of this is another main entrance. The aisles are divided from the nave by stone columns with arches, over which are clerestory windows. At the other end of the building is another seven-light traceried window, which is to be filled with stained glass. Provision will be made for the erection in the future of galleries in the transepts, these to be approached by staircases, and wide corridors connecting the church with the schools and vestries. The school or lecture hall is 64ft. by 34ft., placed at the top portion of the site, with boys' and girls' entrances from Woodhouse-lane one on each side of the main gable, which will contain a five-light traceried window, and angle turrets. Opening out of the schoolrooms eight classrooms are arranged. The two larger ones are situated so that they can be thrown into the schoolroom when required by means of patent folding partitions. A large ladies' parlour, pastor and deacons' vestries, infants' rooms, and the caretaker's residence face Hillary-place. These will form a complete block. The buildings are erected of pitch-faced wallstone and fine sandstone dressings, all outer walls lined with brick, all woodwork is pitchpine unvarnished, slating best Westmoreland slates; all windows filled in with leaded lights. The cost of the building, exclusive of land, will be about £14,800, and the principal contractors are Messrs. C. Myers and Sons, and Messrs. H. Atkinson and Sons, both of Leeds.

"BUILDING NEWS" DESIGNING CLUB: A SMALL
HIGH SCHOOL FOR GIRLS.

For description and details, see page 688.

TWO ITALIAN RENAISSANCE TABERNACLES, &c.

THESE ARE SOME EXAMPLES OF Italian Renaissance ornament in stone belonging to the latter part of the Early period of the style. The two Tabernacles are both Florentine work, and though, as might be expected from the purpose they fulfil, they are small in scale, exhibit a great variety and richness of carved detail, executed with the remarkable skill and taste characteristic of the "sculptor-architects." The larger example from the Church of San Girolamo at Fiesole is of alabaster, and among other points of interest which it contains may be noted the Child figure in the tympanum of pediment, with right hand raised in the ecclesiastical process of benediction; the Dove, enveloped in flame-like rays, immediately over the engraved copper door to the interior space in which were reserved the sacred elements, and presumably emblematic of the Holy Spirit, and the carved Eagle at the base, symbol of St. John the Evangelist—all suggestive of the sacred use of this most necessary adjunct to Catholic ritual. A point also worth noticing is the slight variations in design of the ornament grilling pilasters on the opposite sides—a quality in which our modern and somewhat machine-like repetition is too often lacking. The extreme dimensions are 5ft. 7in. by 2ft. 5in., and the purchase price given for it by the authorities of the Victoria and Albert Museum was £150. The smaller example is in many respects similar; the Dove occupies the tympanum, and the flame-rays occur at the junction of the curtains (carved) to sides of door. The stone is a fine-grained grey limestone. The two details of Brackets or Corbels are of about the same date, the design inside of the Venetian example being very appropriate—to "The Queen of the Sea."

FREDK. R. HIGGINS.

Considerable additions are to be made to the banking premises of Messrs. Cocks, Biddulph, and Co., which we recently illustrated. Mr. J. Oldrid Scott is the architect. The additions are to be fire-proof, on the Fawcett system.

COMPETITIONS.

LEEDS.—The necessity for making better provision for the School of Art has long been felt by the committee, and some time ago it was decided to erect new premises. The committee, before arriving at a decision, visited the Schools of Art at Glasgow, Birmingham, Leicester, and South Kensington—all modern structures. They stipulated that the building should be constructed of Accrington bricks, with Yorkshire stone dressings, and that the cost should not exceed £10,000. As was stated in our last issue, p. 661, Mr. W. H. Bidlake, M.A., architect, of Birmingham, the adjudicator on the designs submitted, selected the design by Messrs. Bedford and Kitson, architects, Leeds, and they have been instructed to proceed with the work. Behind the institute stands the Leeds Boys' Modern School, which is connected with the main building by a covered bridge. On the land forming the north-east corner of the site, now used as a playground, the School of Art will be erected, and, like the Boys' Modern School, a covered way will give access to the institute. The height of the school will be 15ft. more than the institute. It will have frontages to Vernon-street, Percival-street, and Cookridge-street. In character the building will be quite plain, but through large windows it will be well supplied with light from the north and east. Cross lights will be avoided in all the rooms, except in that for design, where they are unobjectionable. On the west elevation, facing Cookridge-street, provision will be made for a panel, which will be filled in by the students in glass mosaic. In the basement provision will be made for classes in the applied arts, including plaster-work, repoussé, enamel, marble and stone-carving, wood-carving and cabinet work, pottery, painting, and decorating, lithography, and book-binding. On the ground floor there will be a light-and-shade classroom, 52ft. by 24ft.; a model and freehand classroom, 32ft. by 25ft.; a lecture-room, capable of seating 100 students; and also a gymnasium. The upper floors will be reached by a main staircase of stone. A painting classroom, 37ft. 6in. by 24ft.; an architecture classroom, 25ft. by 24ft.; a design room and library, 33ft. by 33ft.; and an elementary modelling room, 25ft. by 24ft., will occupy the first floor. The largest rooms will be on the second floor. The life room will be 33ft. by 37ft., the antique room 45ft. by 33ft., and the life-modelling room 34ft. by 25ft. The master's room will also be on this floor, with a private studio above. On the roof a conservatory will be constructed for plants, to be used in the school. There will be nearly 600 lockers for the use of the students. The Birmingham School of Art, which was opened last year, was designed by Mr. Bidlake, who, in his report as adjudicator, stated that if the plans recommended were carried out, Leeds would be provided with an excellent school of art.

On leaving Brighouse for Lichfield, Mr. Emerson Brooke, borough surveyor, has been presented with a pair of vases bearing the following inscription:—"Presented to Mr. Emerson Brooke (12 years borough surveyor) by the officials of the Brighouse Corporation as a mark of their esteem, on his appointment to the city surveyorship of Lichfield."

The restoration of the parish church of Melksham has advanced one more stage by the erection during the past week of the figure of St. Michael in the niche over the north door. The figure is of Painswick stone, and was carved and fixed by Messrs. Harry Hems and Sons, sculptors, of Exeter.

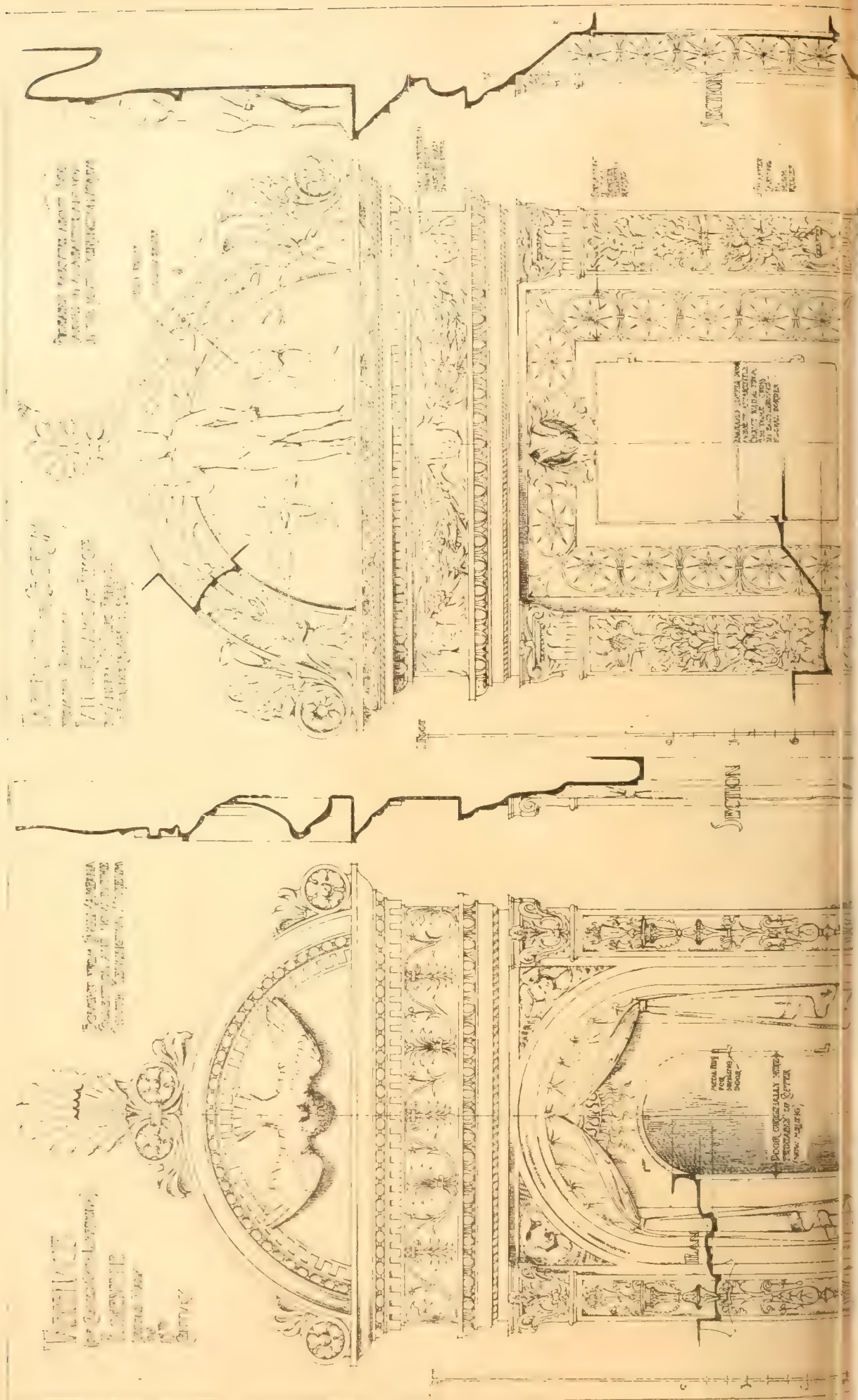
The Yealmbridge Steam Sawmills at Yealmpton, near Plymouth, were totally destroyed by fire on Sunday morning, the damage done being estimated at £10,000. About 70 men will, as a consequence of the fire, be temporarily thrown out of employment.

The Bill of the Tees Valley Water Board, which has already passed the Lower House, has been ordered to be reported for a third reading in the House of Lords.

A serious outbreak of fire occurred at the Duntroon Sawmills at Rumburgwell on Friday, and before it was subdued damage had been done to the extent of £15,000.

The Institution of Mechanical Engineers gave a *conversazione* last Friday evening at their house in Storey's-gate, St. James's Park.

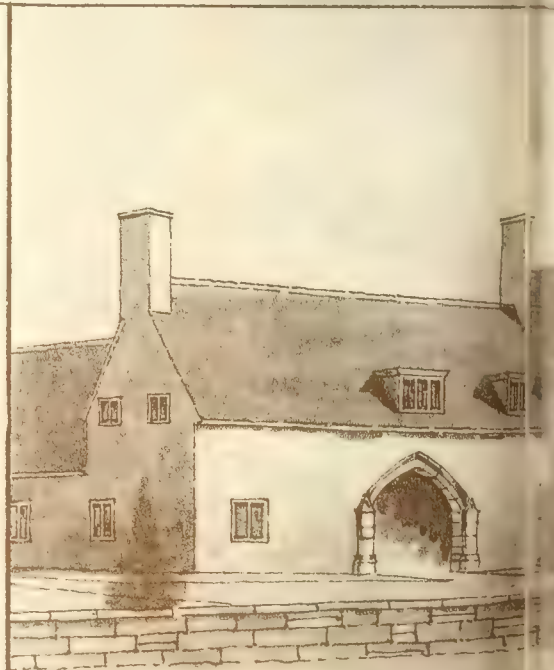
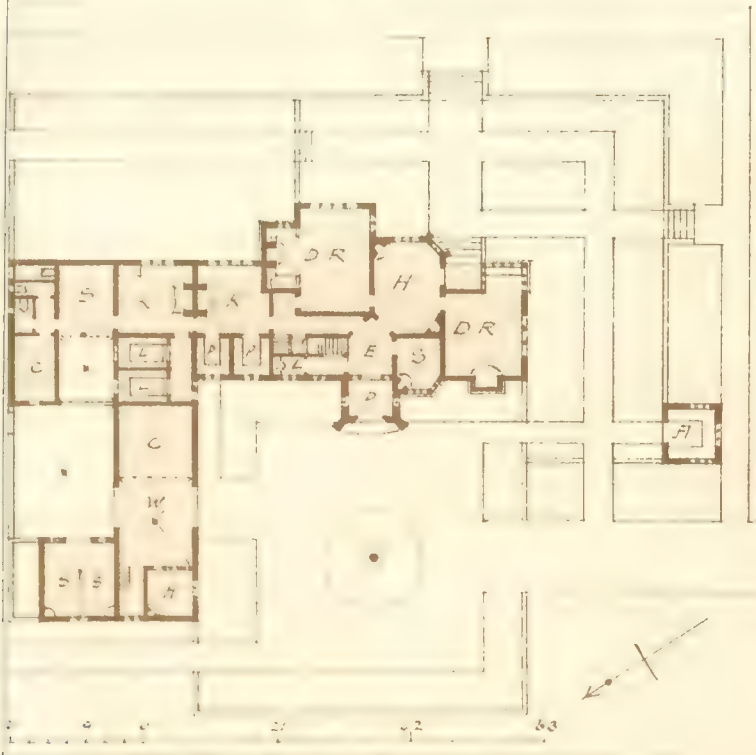
An inquiry into the application of the Solihull District Council to borrow £750 for the purpose of purchasing a site for public offices, depot, &c., was held at the workhouse, Solihull, on Friday, by Colonel Durnford, Local Government Board inspector.





HOUSE AT BARNT GREEN WORCESTERSHIRE

Salman & Salman Architects 1901.

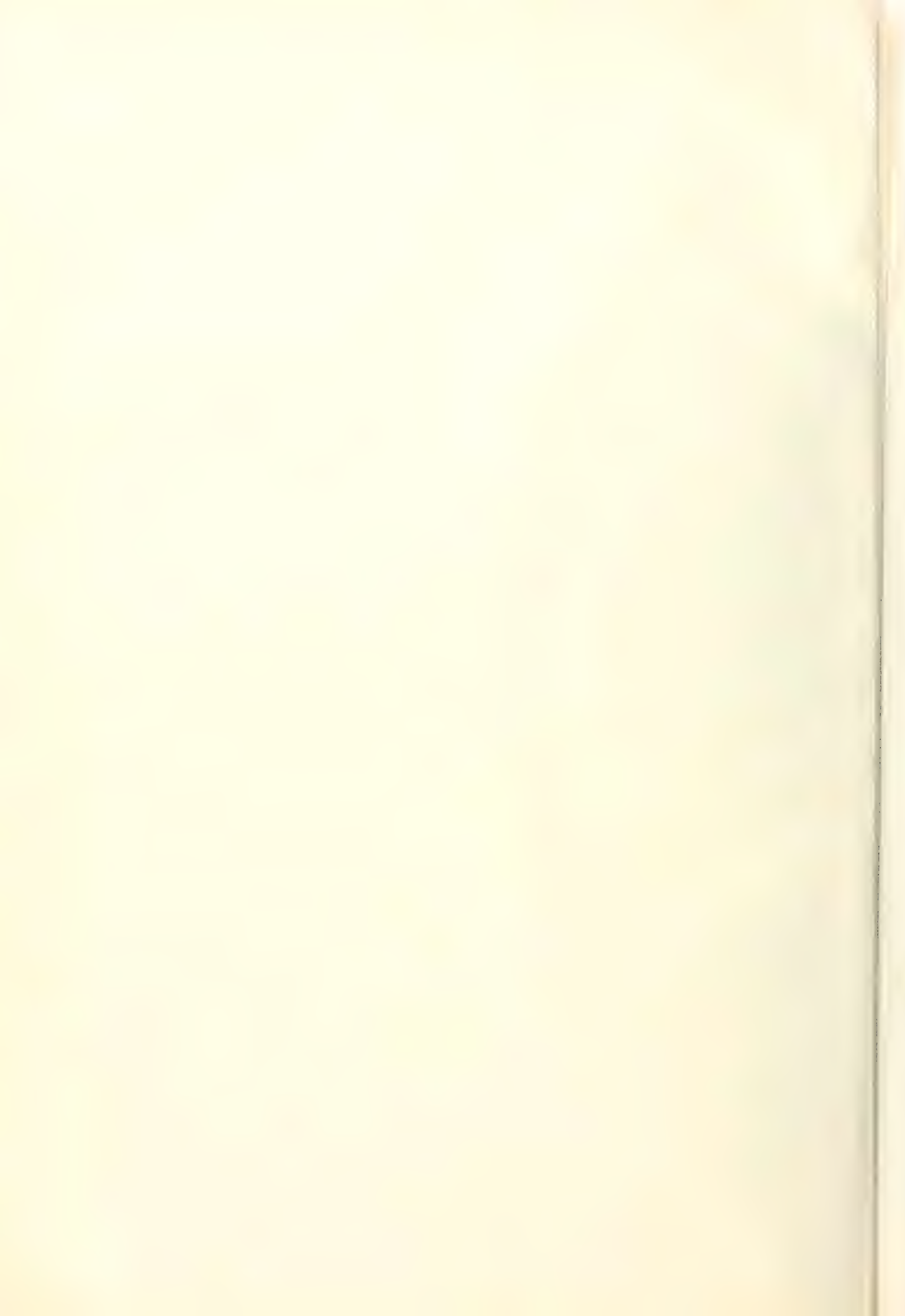


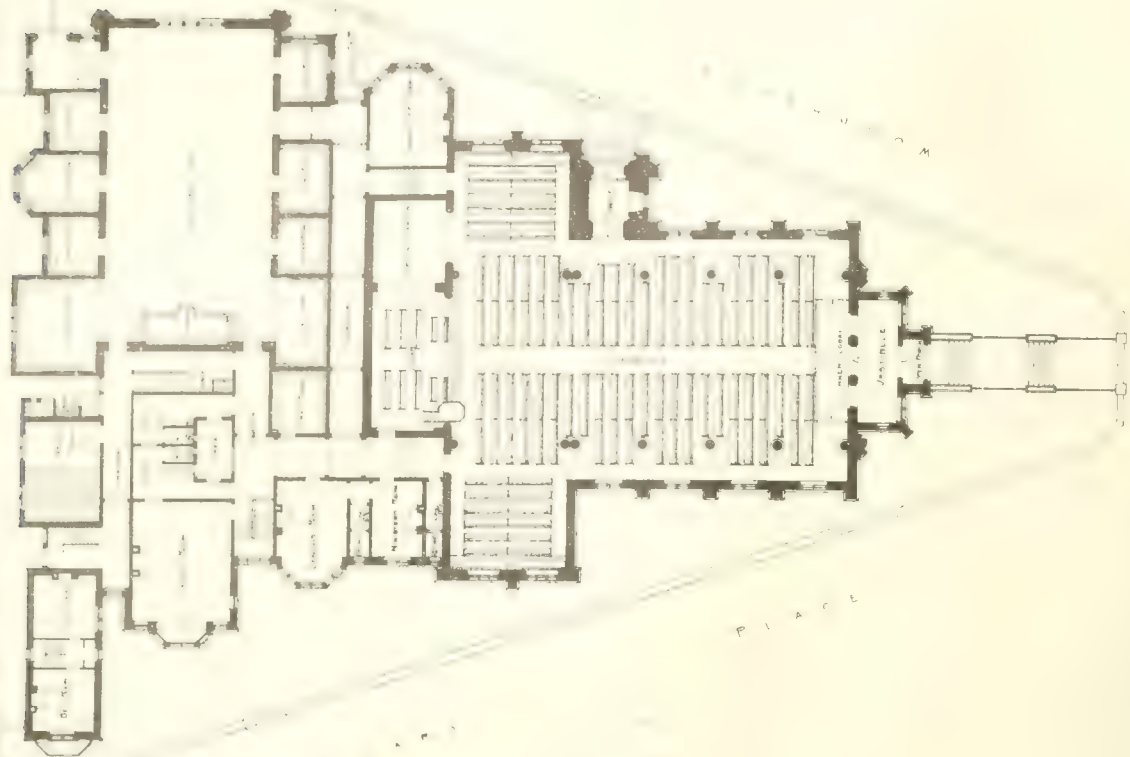


GARDEN FRONT

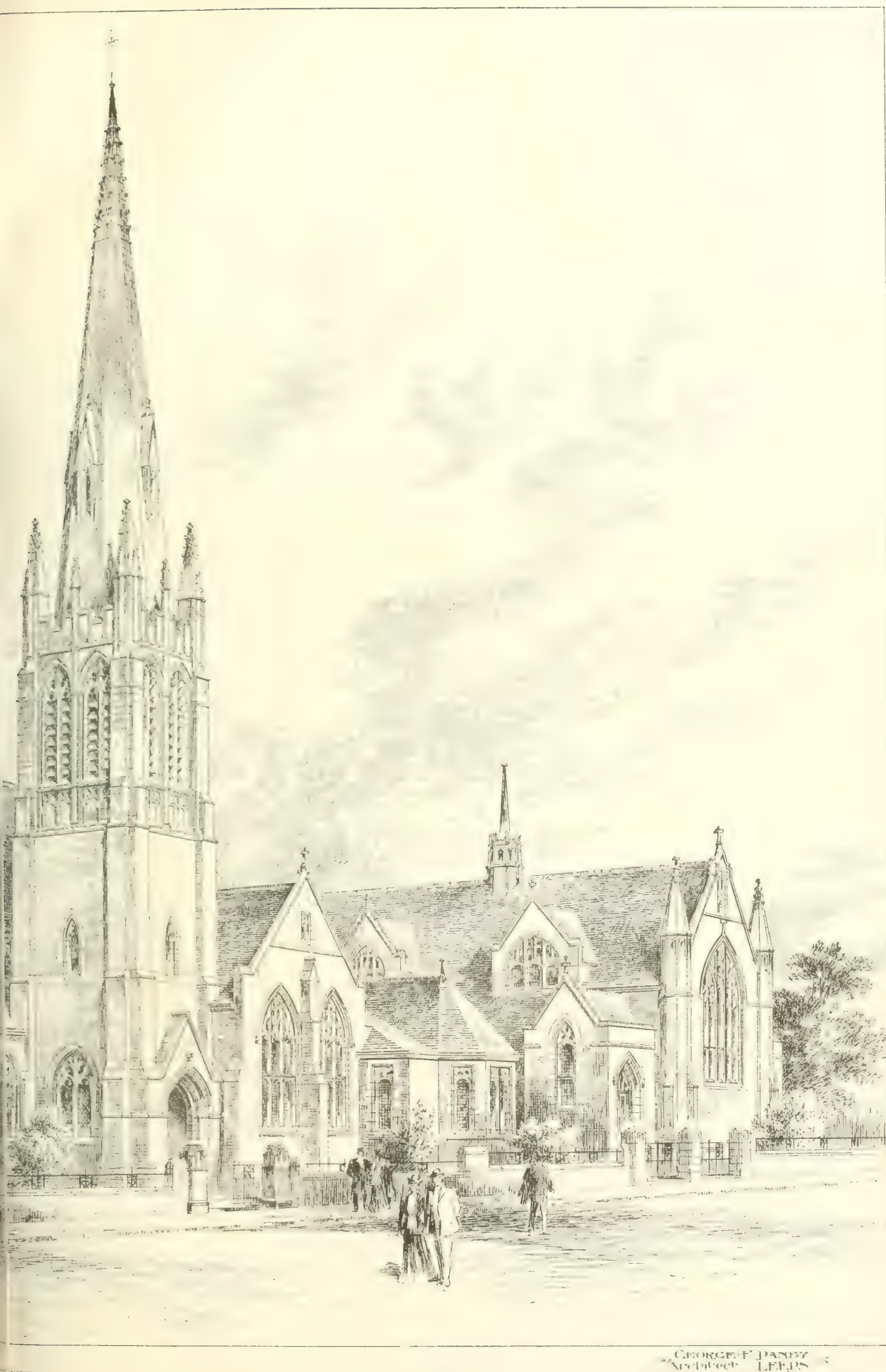


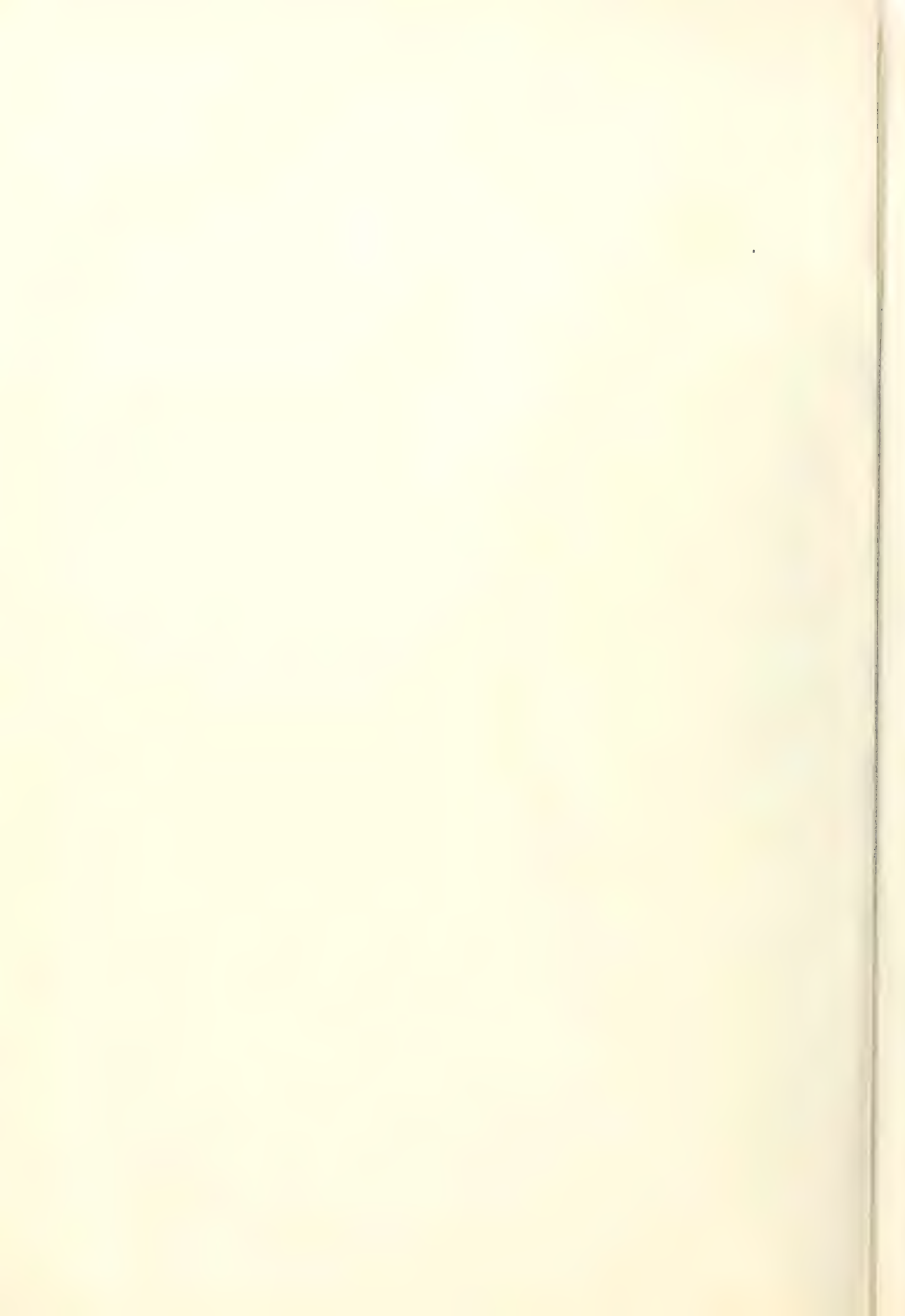
ENTRANCE FRONT





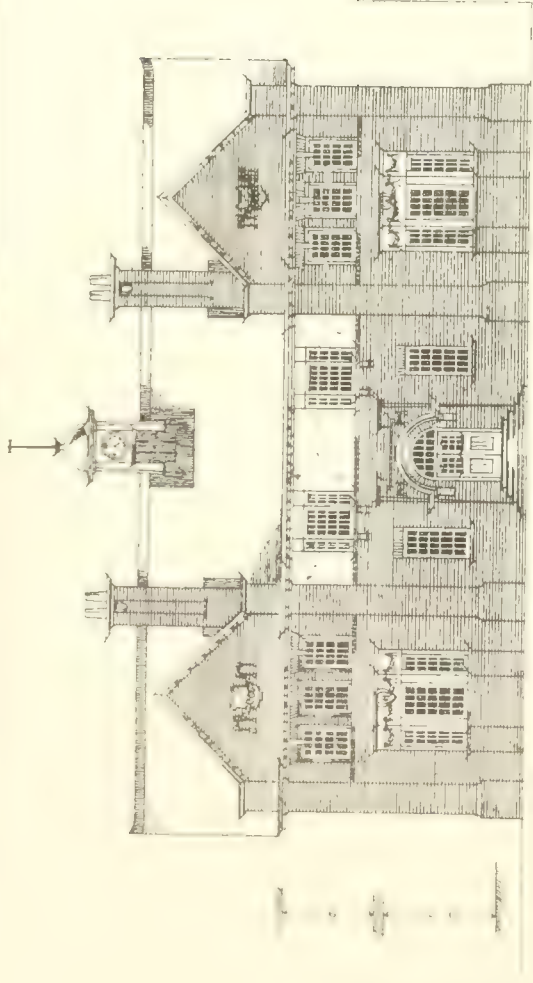
CONGREGATIONAL CHURCH AND SCHOOLS, WOODHOUSE LANE, LEEDS.



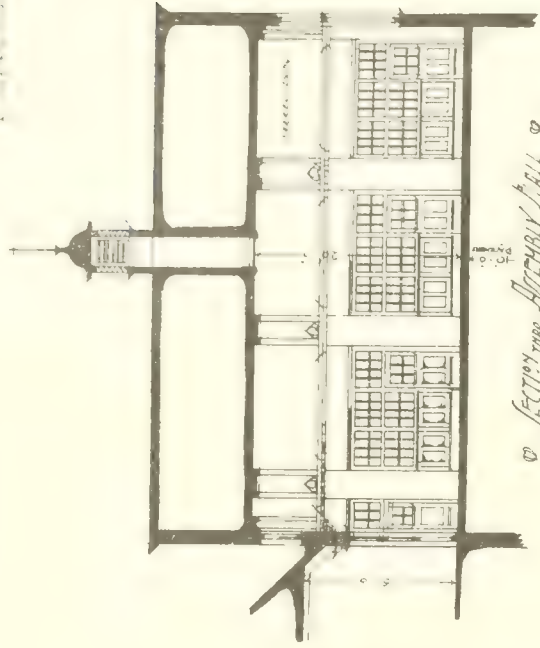




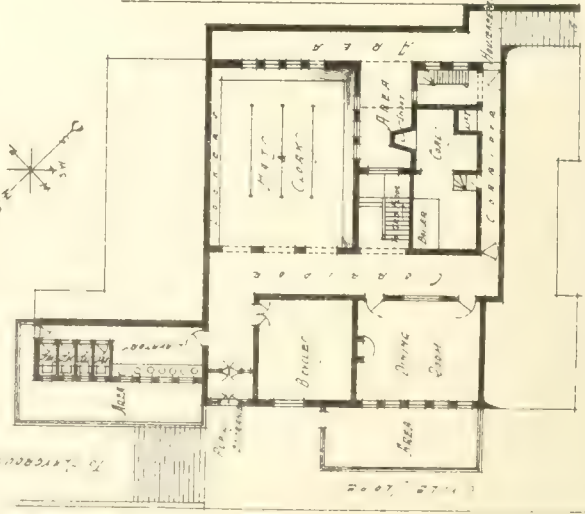
PLACED IN 1911



FRONT ELEVATION



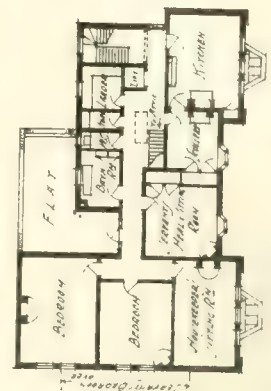
SECTION THROUGH ARCHWAY WALL



BASEMENT PLAN



GROUND PLAN



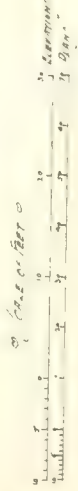
FIRST FLOOR PLAN

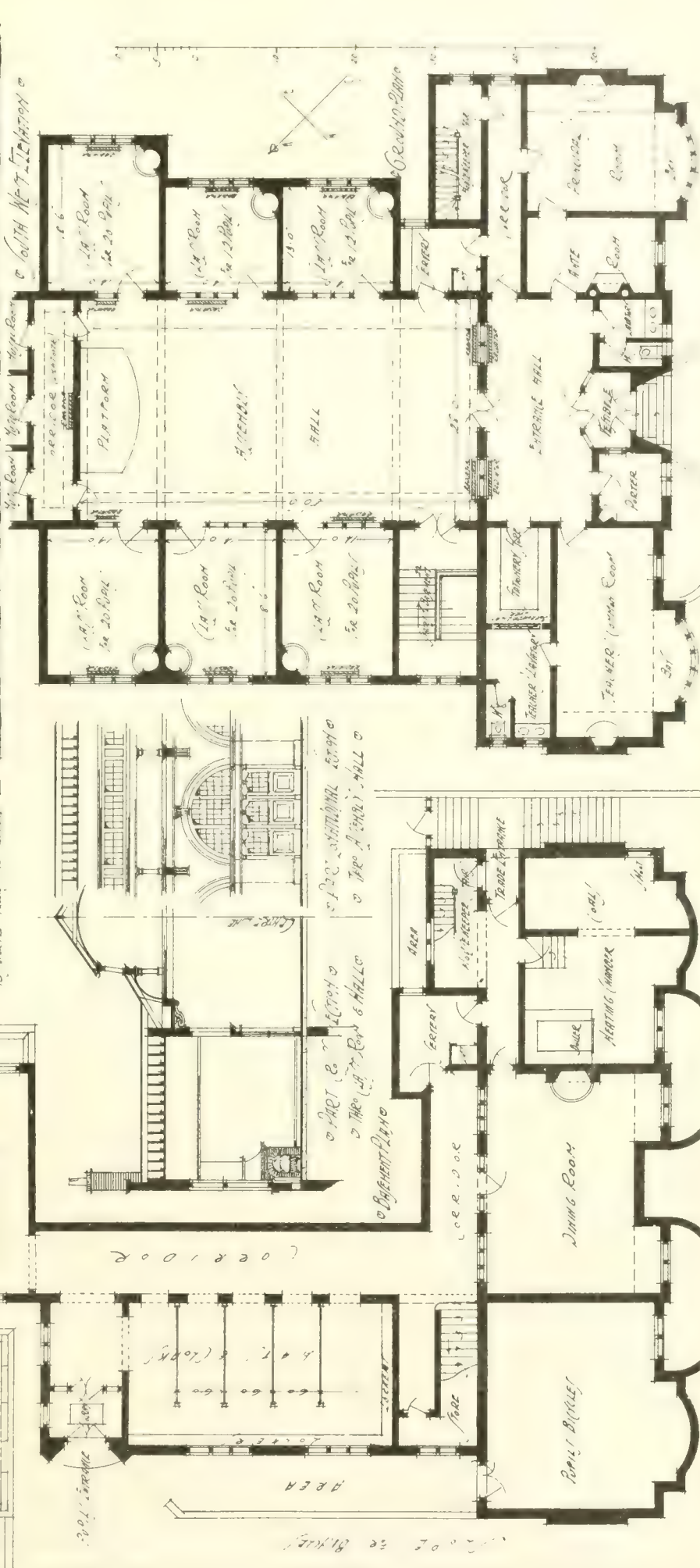
B.N.D.C.

A. HALL HIGH CHURCH 1911

BY GOW CHURCH

TOTAL COST £12,160.00
 12/16m. with 1st fl.
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PLACED FIRST.

HOUSE AT PRINCETON.
NEW BEDFORD, MASS.

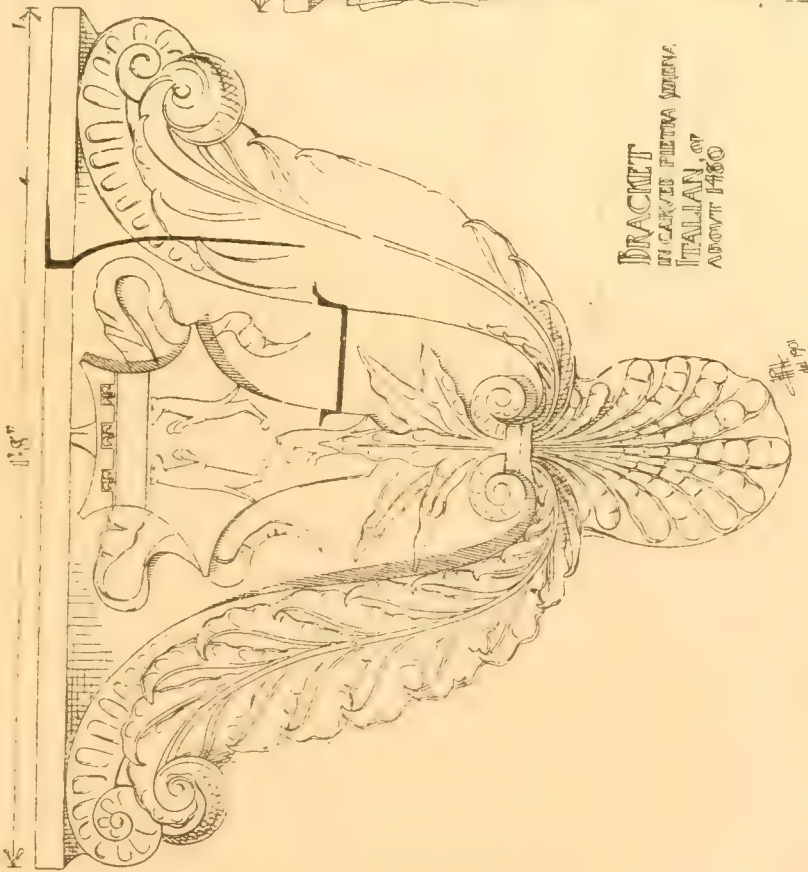




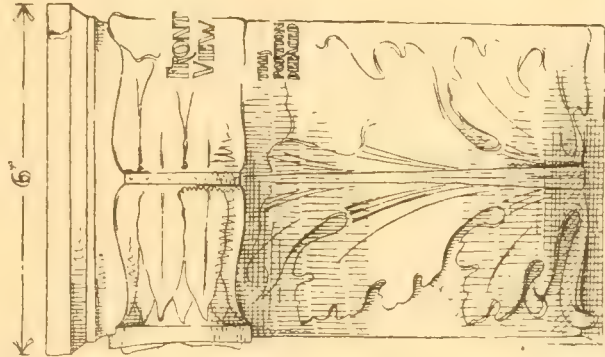
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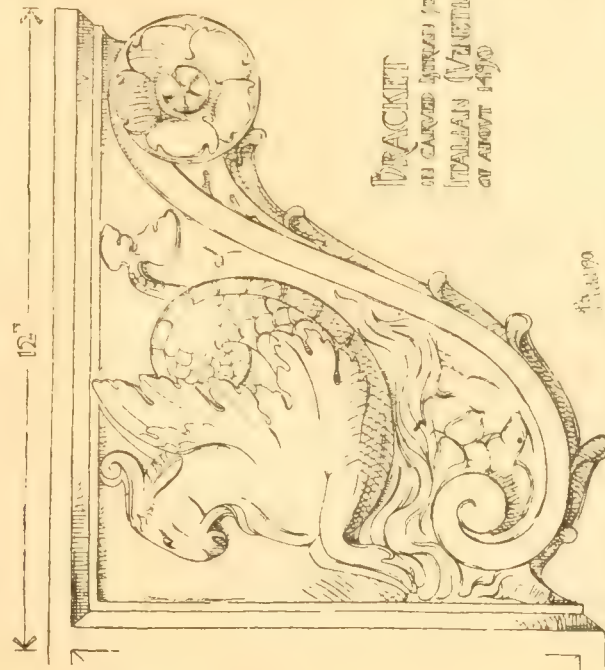


BRACKET
IN CARVED PIERRA SERENA
ITALIAN, c.
ABOUT 1480



FRONT
VIEW

THAT
PORTION
REMOVED



BRACKET
IN CARVED PIERRA SERENA
ITALIAN (VENETIAN)
c. ABOUT 1480

TWO ITALIAN TABERNACLES.

LEGAL INTELLIGENCE.

THE RIGHT TO SEE A GOVERNMENT DEPARTMENT.
GRAHAM V. COMMISSIONERS OF HIS MAJESTY'S WORKS AND PUBLIC BUILDINGS.—In the King's Bench Division on Wednesday, Mr. Justice Ridley and Mr. Justice Phillimore gave judgment on a point of law before trial on the merits—a point, it was said, often mooted, but never decided—whether the Commissioners of Works could be sued on contract, or whether the remedy was by means of a petition of right. In this case the plaintiffs were builders and contractors, and under an agreement, dated December 11, 1899, made between them and the Commissioners, they contracted to erect a post-office at Stalybridge for £5,715. They commenced the work, and were willing to complete it; but the Commissioners served them with a notice determining the contract, and took possession of the land. This was the cause of action, but the defendants pleaded, in addition to several defences on the merits, that the action could not be brought against them in their personal capacity as Commissioners, and that the proceeding could only be by way of petition of right to the Crown. On the part of the plaintiffs the case was that the Commissioners were a body incorporated by statute with all the powers of a corporation, and could both sue and be sued. On the part of the Crown it was contended that though the commissioners were a corporation, yet they acted as servants of the Crown, and could not be sued, on the general principle that the prerogative of the Crown could not be taken away without express words. On the other side, it was argued that the Commissioners entered into the contract personally, and not as servants of the Crown. Mr. Justice Ridley, after referring to the authorities on the question of the liability of public officers, said here it was contended that the Commissioners contracted as servants of the Crown only, and were not liable to be sued; but he thought that all the facts pointed in the opposite direction. It was a case in which a public body made contracts in the course of their duty all over the country with respect to works required by his Majesty's Government, and it seemed to him that they made these contracts in their own personal capacity as Commissioners. If they were held liable to pay, he supposed the money would come out of funds provided by Parliament. He, therefore, was of opinion that their judgment upon the point raised should be in favour of the plaintiffs. Mr. Justice Phillimore, in concurring, said that, though the Crown could not be sued, nor a servant of the Crown acting for the Crown, yet it was an extremely convenient thing to establish, with the consent of Parliament, a body representing the Crown in certain matters, who could sue and be sued without the formalities necessary for securing redress from the Sovereign. For such a purpose the Crown had, in certain cases, with the sanction of Parliament, created commissioners, with the powers of corporations, who could make contracts, with the liability to be sued. He saw no reason for saying that the defendants did not come within that class of persons. Accordingly, judgment on the point raised was against the Crown.

THE STRAINT-TO-HOLBORN IMPROVEMENTS. Mr. Troutbeck, high bailiff of Westminster, and a special jury sat at the Westminster Guildhall on Thursday in last week to assess the compensation to be paid by the London County Council to Messrs. Lazarus, Ralph, and Sons, gunsmiths and cycle dealers. Mr. Freeman, K.C., for the claimants, said they carried on business at 46, Holywell-street. The average profits for the last five years had been £1,350 per annum net, and at three years' purchase the value of the business would be shown at £4,050. The stock and fixtures brought the total claim to £5,151. The jury gave a verdict for £1,850.

A CITY VICARAGE AND TUBE VIBRATION.—On Thursday in last week, at the Surveyors' Institution, Great George-street, Mr. Daniel Watney, sitting as sole arbitrator, heard the case of Pearce v. Central London Railway Company, a claim for compensation in respect of damage alleged to have been caused to the vicarage of Christ Church, Newgate-street, by the construction of the new line. According to the opening statement of counsel, when the Rev. E. H. Pearce took up his residence at the vicarage in September, 1895, the house, though somewhat old, was in a thorough state of repair. Early in 1897 cracks were observed in the walls on the ground floor, and the damage subsequently increased. The claimant said he had known the outside of the house for 25 years, and had never noticed any cracks before. Mr. R. P. Day, diocesan surveyor, said that the vicarage was put in thorough repair in 1895. Cracks appeared in January, 1897, and developed rapidly. In his opinion they were due to subsidence caused by the pumping operations. The damage became so serious that at one time he was afraid the property would have to be condemned under the London Building Act. He estimated the cost of repair at £750. Further evidence was given for the claimant by Mr. Arthur Thwaites. Mr. Mott, one of the engineers of the company, said the sinking of four shafts com-

menced in January, 1897, and was completed in July of the same year. Pumping began on Jan. 16, 1897, and was finished in May. The tunnels were constructed between August, 1898, and February, 1899. He failed to see how the pumping operations could affect the vicarage, as no gravel—only water—was abstracted. In his opinion the cracks already existed, and had been pointed over. Mr. Alexander R. Stenning expressed his opinion that the cracks were not due to subsidence. The necessary repairs could be executed at a cost of £35. This view was supported by other witnesses. The arbitrator reserved his award.

AT BILLET'S CERTIFICATE BINDING. At Darlington County-court, on Friday, before Mr. Templer, judge, a claim was brought by J. G. Newby, of Middlesbrough, contractor and builder, against Sarah Fowler, of Darlington, for £35, balance of claim arising out of a building contract for the erection of two houses in Stanhope-road, Darlington. Two houses were erected to cost £860 in Stanhope-road, Darlington, and Mr. Geo. Barker, the architect named in the agreement, gave a certificate. The work was added to by directions from Mrs. Fowler, and this the plaintiff stated she said would be settled up. It was now disputed, and a counterclaim of £13 5s. 8d. set up. His honour dismissed the counterclaim, and gave judgment for the £35, with costs, holding that the claim was barred by the terms of the agreement and the certificate.

KEDGLEY ARBITRATION AWARD. The award of Mr. T. Taylor Wainwright, of Liverpool, umpire in the recent arbitration as to the value to be paid by the corporation for the North-street tannery, owned by Ald. C. H. Foulds, acquired for street improvements, was made known on Monday, the amount being £11,980. The costs of the umpire and the two arbitrators, added to the cost of the award, are £646 14s. The claimant's valuation was over £17,000, and the corporation's about £4,900.

IN RE EDWARDS AND MEDWAY. The debtors, William Edwards and Edward Medway, who carried on business in partnership at 9, Ethelred-street, Kennington Cross, as builders and contractors, filed their petition in bankruptcy on September 18, 1900, and applied last week for an order of discharge. It appeared from the Official Receiver's report that the debtors commenced business under the style of Edwards and Medway in the year 1891. On September 7, 1900, they called their creditors together, when it was resolved that the estate should be wound up within a period of fifteen months, under the control of two inspectors and a committee, the debtors undertaking to file their petition in the event, which happened, of a creditor for a sum exceeding £20 declining to fall in with the resolution. The debtors attributed their failure to their working capital having been insufficient to enable them to carry out their works in hand at the date of the receiving order, including the erection of seven schools for the London School Board at a contract price, with variations, of about £74,176. There were various estimates of the amount of the ranking liabilities under the bankruptcy, the debtors' estimate in their statement of affairs being £19,374 0s. 6d., and the Official Receiver reported that the assets were not of the value of 10s. in the pound on the amount of unsecured liabilities. Evidence having been given as to the amount of liabilities and the probable value of the assets not yet realised, his Honour said he was not satisfied that the assets would not realise 10s. in the pound on the unsecured liabilities; indeed, in his view there was a distinct likelihood of their producing that amount. He granted an unconditional discharge.

Mr. Willoughby Charles Furnivall, who died at Broadstairs on Thursday in last week, joined the Indian Public Works Department in 1869 as superintending engineer on the Delhi and Rewari Railway, and held, among other appointments, before his retirement in 1886, those of director of construction for State railways and chief engineer and secretary to the Chief Commissioner, British Burma.

His Majesty's Office of Works have intrusted the St. Pancras Iron Work Co., Ltd., with the fitting up of the stables at the British Embassy in Paris. Among other stables this old-established firm have fitted this year are those of Lord Durham at Newmarket, the Countess of Lovelace, Sir Audley Neeld, Sir Wm. Marling, the Hon. W. F. D. Smith, M.P., F. Layland Barratt, M.P., E. J. Stanley, M.P., W. S. Cunard, &c.

The preamble of the Liverpool and Manchester Electric Express Railway Bill has been passed by a Committee of the House of Lords, and the measure was ordered to be reported for third reading.

Messrs. Hall Bros. having completed their contract with Mr. R. E. Richardson for the erection of a house at Morsted, the workmen were entertained by the owner to dinner at the Eagle Hotel, Winchester, on Saturday. The house is Queen Anne in style, and has been built from designs by Messrs. Cancellor and Hill, of Winchester.

Our Office Table.

The Council of the Society of Architects are about to carry the outside on behalf of the Architects' Registration Movement into Scotland, and have decided to convene a conference of architects to consider the question in the City Chambers, Edinburgh, on Wednesday next, at six o'clock, and a similar gathering at the Philosophical Society's Rooms, 207, Bath-street, Glasgow, at the same hour on the following day. At each meeting Mr. T. Walter L. Emden, President of the Society of Architects, will take the chair, and a paper on "The Statutory Registration of the Profession" will be read by Mr. Ellis Marsland, hon. secretary of the society. All architects are invited to attend the meetings, and discussion will be welcomed. It will be remembered that during the last few years meetings convened by the society have been held at Cardiff, Newcastle-on-Tyne, Leeds, Sheffield, Birmingham, Bristol, Exeter, Liverpool, and Manchester, at all of which resolutions approving the principle of statutory examination and registration have been passed.

SOME £110,000 having been provided for the long-projected cathedral for Liverpool, the battle of the sites has reopened in that city, and is being carried on in the columns of the local newspapers with the customary acerbity. Mr. Robert Gladstone, of that city, urges that St. James's Mount, adjoining St. James's Cemetery, offers, from an architectural point of view, the finest site in the city. The length available for building on without interfering with the existing chapel is 1,020ft., or 1,420ft. including the site of the chapel, and its greatest breadth, where the transepts of the cathedral would be placed, is 248ft. On this area there is more than enough space to build, he suggests, a full-sized copy of Westminster Abbey, of which the dimensions are Length 400ft. (omitting Henry VII.'s Chapel), and breadth across the transepts 200ft. There would be ample room for a chapter-house and several other buildings at the Parliament-street end of the Mount. In this position the cathedral would have an abundance of light and air, while the surroundings are good, and free from noise and dirt. On the other hand, "Amicus" points out that St. James's Mount is narrow from east to west (another writer, Mr. Thomas Pritchard, says it is only 210ft., and not 248ft., across, on actual measurement), and thus the cathedral could not be properly orientated, nor does it afford space for building a deanery and houses for the clergy in close proximity. Another serious drawback is that at least 500 bodies are buried in the Mount itself. Other suggested sites are the land between Monument-park and Daubly-street, and that between Abercromby-square and Hope and Bedford Streets. In any case, it is to be hoped, for the honour of Liverpool Churchmen, that the ridiculous *fiasco* which wrecked the competition of twenty years ago will not be repeated.

At the last meeting of the Society of Antiquaries, Mr. J. T. Mickelthwait, vice-president, in the chair, a series of papers were read with reference to the excavations in progress at Hayles Abbey, Gloucester. The Rev. W. Bazeley, described the tiles found among the ruins, and Mr. W. H. St. John Hope gave some historical particulars as to the foundation. Mr. H. Brakspear submitted an architectural description of the abbey church, as revealed by the ground plan and fragments found. As built between 1246 and 1251, the church was of the Abbey Dore type, with an eastern procession-path and chapels beyond the presbytery, which was aisled. But after the gift of the famous relic of the Holy Blood in 1270 an apsidal chapel was built for the shrine that contained this behind the high altar, and the procession-path and chapels were replaced by a ring of polygonal chapels, after the fashion of Westminster and Tewkesbury.

The Slade Professorship of Fine Art at Oxford University becomes vacant at the end of Trinity term, and the electors will proceed shortly to the election of a professor. Candidates are requested to send in their names to the Registrar of the University on or before Saturday, the 15th prox. Testimonials are not necessarily required; but candidates may send in with their application such evidence as they may desire as to their qualifications for the post. The professorship is tenable for three years. The professor is required to give annually a course of not less than

Trade News.

WAGES MOVEMENTS.

Yarmouth. The Yarmouth Master Builders' Association have made an offer to the new men on strike, accepting some of their proposals, and granting an advance of 4d. per hour to the boys as apprentices.

Warrington. The operative painters, who went out on strike three weeks ago, have resumed work. The matter has been referred to the Board of Trade for arbitration.

The Light Railway Commissioners have submitted to the Board of Trade for confirmation an order made by them for the construction of a light railway in the counties of Norfolk and Suffolk, from Bury St. Edmund's to Stanton, Walsham-le-Willows, South Lopham, and Diss.

Interesting archaeological investigations are in progress at Caerwent, the Monmouthshire village which was the site of the Roman city of Venta Silurum. The work began in 1899, and the numerous Roman objects which have since been recovered are now exhibited in a temporary museum in the village. Further pecuniary help is required for the continuance of the exploration, and contributions may be sent to the hon. treasurer, Mr. A. E. Hudd, 94, Pembroke-road, Clifton.

The Candlish Memorial Church which has been erected for the Fountainbridge United Free Church congregation at Merchiston, Edinburgh, was opened on Saturday afternoon.

At a sale of pictures in London on Saturday, "The Lock," by J. Constable, R.A. (55in. by 47in.) realised 1,900 guineas.

In the House of Commons on Monday night, Lord Stanley, replying to Lord Balcarras, said that it had not been determined to destroy the historical fortification known as the King's Bastion at Portsmouth, but some slight modifications which were necessary have recently been made in the Eastern portion. The main portion will remain untouched.

The memorial window placed in St. Giles Cathedral, Edinburgh, to the memory of the late Major-General A. Don Wauchope, C.B., C.M.G., was unveiled on Monday by the Earl of Leven and Melville, Lord High Commissioner of the Church of Scotland. The window, which has been placed in the Moray aisle, is 26ft. high, and has five upper lights and five lower lights, with tracery filling the upper portion. The subjects are the Covenant between David and Jonathan, and David mourning the deaths of Saul and Jonathan. The artists are Messrs. Ballantine and Gardiner, of Edinburgh.

A new organ was dedicated last week in St. Deny's Church, Southampton. It has cost £930, and was built by Mr. Alfred Kirkland, of Upper Holloway.

The school board for Littleborough, Lancs, have invited ten local architects to submit competitive designs for a proposed central school.

The plans for the new theatre, Clifford-street, York, on the site of the Corn Exchange, York, prepared by Mr. John P. Briggs, Effingham House, Arundel-street, Strand, W.C., were submitted to the city council on May 14, and were approved.

The Masons' and Builders' Association of New York have locked out between 15,000 and 20,000 bricklayers, owing to differences which have arisen.

PILKINGTON & CO.

(ESTABLISHED 1838).

MONUMENT CHAMBERS,
KING WILLIAM STREET, LONDON, E.C.

Registered Trade Mark:

POLONCEAU ASPHALTE

Patent Asphalte and Felt Roofing.

ACID-RESISTING ASPHALTE.

WHITE SILICA PAVING.

PYRIMONT SEYSSSEL ASPHALTE.

WM. OLIVER & SONS,

MAHOGANY, WAINSCOT, WALNUT,

TEAK, VENEER, and FANCYWOOD

MERCHANTS.

120, BUNHILL ROW, LONDON, E.C.

The most extensive Stock of every kind of

Wood in Planks and Boards, dry and fit for

immediate use.

LATEST PRICES.

IRON, &c.

	Per ton.	Per ton.
Roller-Iron Joists, Belgian	£6 0 0 to	£6 10 0
Roller-Iron Joists, English	9 0 0 "	10 0 0
Wrought-Iron Girder Plates	9 0 0 "	9 15 0
Rail Iron, good Stuffs	8 7 6 "	9 7 6
Do. Lowmoor, Flat, Round, or Square	20 0 0 "	20 0 0
Do. Welsh	5 15 0 "	5 17 6
Boiler Plates, Iron—		
South Staffs	7 17 6 "	8 5 0
Best Sneedhill	13 0 0 "	13 10 0

Angles 10s., Tees 20s. per ton extra.
Builders' Hoop Iron, for bonding, &c., £6 15s.
Builders' Hoop Iron, galvanised, £15 10s. od. per ton.
Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24.
6ft. to 8ft. long, inclusive gauge	Per ton.	Per ton.
Best ditto	£12 5 0	£12 10 0
	12 15 0	13 0 0
Cast-Iron Columns	Per ton.	Per ton.
Cast-Iron Stanchions	£9 0 0 to	£9 10 0
Roller-Iron Fencing Wire	10 5 0 "	10 10 0
Roller-Iron Fencing Wire—		
Galvanised	8 5 0 "	8 15 0
Cast-Iron Sash Weights	9 5 0 "	10 0 0
Cut Clasp Nails, 3in. to 6in.	7 5 0 "	8 0 0
Cut Floor Brads	12 0 0 "	13 0 0
Wire Nails, Points de Paris—	11 15 0 "	12 15 0

0 to 7 8 9 10 11 12 13 14 15 B.W.G.
9 6 10 10 3 10 9 11 3 12 12 9 13 6 14 6 per cwt.

Cast-Iron Socket Pipes—
3in. diameter £6 17 6 to £7 5 0
4in. to 6in. 6 15 0 " 7 0 0
7in. to 24in. all sizes 6 15 0 " 7 0 0

Covered with composition, 2s. 6d. per ton extra; turned and bored joints, 5s. per ton extra.

Fig Iron— Per ton.

Cold Blast, Lille-shall 105s. to 110s.

Hot Blast, ditto 75s. 6d. to 82s. 6d.

Wrought-Iron Tubes and Fittings Discount off Standard

Lists f.o.b. :—

Gas-Tubes 62½ p.c.
Water-Tubes 57½
Steam-Tubes 52½
Galvanised Gas-Tubes 50
Galvanised Water-Tubes 45
Galvanised Steam-Tubes 40

10cwt. casks, 5cwt. casks.

Per ton. Per ton.

Zinc, English London mill £23 10 0 to £24 0 0

Do., Vieille Montagne 24 0 0 " 24 10 0

Sheet Lead, 3lb. per sq. ft. super. 14 17 6 " 15 17 6

Pig Lead, in 1cwt. pigs 12 10 0 " 13 10 0

Lead Shot, in 25lb. bags 16 2 6 " 17 2 6

Copper Sheets, sheathing and rods 84 10 0 " 85 0 0

Copper, British Cake and Ingot 75 5 0 " 75 15 0

Tin, Straits 117 15 0 " 119 0 0

Do., English Ingots 120 0 0 " 121 10 0

Splitter, Siberian 17 5 0 " 17 10 0

TIMBER.

Teak, Burmah.....per load £10 10 0 to £16 5 0

" Bangkok " 10 0 0 " 15 5 0

Quebec Pine, yellow " 4 2 6 " 5 0 0

" Oak " 3 15 0 " 6 10 0

" Birch " 4 2 6 " 6 0 0

" Elm " 5 5 0 " 6 0 0

" Ash " 4 2 6 " 6 0 0

Dantisc and Memel Oak " 2 15 0 " 4 7 6

Fir " 3 5 0 " 4 10 0

Wainscot, Riga p. log " 1 17 6 " 3 2 6

Lith. Dantisc, p.i. " 4 0 0 " 5 10 0

St. Petersburg " 4 0 0 " 6 10 0

Greenheart " 7 15 0 " 8 0 0

Box " 7 0 0 " 15 0 0

Sequoia, U.S.A., per cube foot 0 1 9 " 0 2 0

Mahogany, Cuba, per super foot

1in. thick 0 0 6 " 0 0 8

" Honduras " 0 0 6 " 0 0 7½

" Mexican " 0 0 4 " 0 0 4½

" African " 0 0 3½ " 0 0 5½

Cedar, Cuba " 0 0 3 " 0 0 3½

" Honduras " 0 0 3½ " 0 0 3½

Satinwood " 0 0 10 " 0 1 9

Walnut, Italian " 0 0 3 " 0 0 7½

" American logs " 0 2 3 " 0 4 6

Deals, per St. Petersburg Standard, 120—12ft. by 1½in.

by 1½in.

Quebec, Pine, 1st £25 0 0 to £30 0 0

" 2nd 17 10 0 " 21 0 0

" 3rd 12 0 0 " 14 0 0

Canada Spruce, 1st 11 5 0 " 14 0 0

" 2nd and 3rd 8 10 0 " 10 5 0

New Brunswick 8 15 0 " 11 10 0

Riga 9 10 0 " 10 5 0

St. Petersburg 11 0 0 " 13 0 0

Swedish 12 5 0 " 21 10 0

Finland 11 15 0 " 13 5 0

White Sea 13 0 0 " 23 0 0

Bottoms, all sorts 5 0 0 " 12 10 0

Flooring Boards, per square of 1in. :—

1st prepared £0 12 0 " £0 18 0

2nd ditto 0 11 0 " 0 14 0

Other qualities 0 6 0 " 0 13 0

Staves, per standard M.

1st, ditto £37 10 0 " £45 0 0

Memel, or, pipe 220 0 0 " 230 0 0

Memel, black 190 0 0 " 200 0 0

OILS.

Linseed.....per tun £27 10 0 to £28 0 0

Rapeseed, English pale " 29 10 0 " 29 15 0

Do. brown " 27 15 0 " 28 10 0

Cottonseed, refined " 21 10 0 " 22 0 0

Oliver, Spanish " 34 0 0 " 40 0 0

Sesol, pale " 26 0 0 " 27 10 0

Cocunut, Cochinchina " 29 15 0 " 30 0 0

Do., Ceylon " 25 10 0 " 25 15 0

Palm, Lagos " 25 5 0 " 25 10 0

Oliver " 17 5 0 " 19 5 0

Importing U.S. per gal.

Petroleum, refined " 0 7 0 " 0 8 0

Tin, Stockholm per barrel 1 6 0 " 1 6 0

Do., Archangel " 0 12 0 " 1 0 0

Turpentine, American.....per tun 37 0 0 " 37 5 0

MEETINGS FOR THE ENSUING WEEK.

ASSOCIATION OF BUILDERS' ASSOCIATION, FRIDAY, MAY 25, 1901, 11.30 a.m., 1.30 p.m., 3.30 p.m., 5.30 p.m., 7.30 p.m., 9.30 p.m.

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LIST OF TENDERS OPEN.

Aldershot, Board's books 750 pages	N. p. 10	Newbury, Clerk, Civil Stationer, 1, A. & S. Street	May 27
Waterfall, Electric Lighting Scheme	—	M. J. Fleming, Engineer, Sawney, The Mill, Waterbury	" 28
Buxton, Structure for Thermal Water Pump, cost £1,000	£20, £10, £0	W. H. Gurney, Town Surveyor, Town Hall, Buxton	June 8
Ennis, C/o Chas. Addisons, &c., to District Lunatic Asylum	—	John Enwright, Clerk, Ennis District Lunatic Asylum, C/o Chas. ..	" 10
limited to Irish Architects; Assessor	£00	W. T. Mann, Clerk, Unemployment, Tewkesbury	" 24
Ty Wincle, Isolation Hospital	£10, £10	John Parker, Civil Engineer, Hereford	" 30
Hovefield, Municipal Buildings	£100, £10, £10, £10, £10	The Town Clerk, Town Hall, Manchester	July 31
Manchester, Fire and Police Station, &c., £7,000 limit	£10, £20, £10	E. T. Atchison, Clerk, S. Whitehead-street, New Brumpton	—
Gillingham, Kent, School, 1,200 places; £8,500 limit	£1 — merged, and the rest £5	G. Osgerby, Solicitor, New Southgate, N.	—
New Southgate, N., Double-fronted House, 36ft. by 32ft. cost	£1,000	The Borough Engineer, Town Hall, Salt Hill	—
Salt Hill, Machinery or Apphance for Sawage Works	£50	John Blakesley, Burbage-road, Hinckley	—
Hinckley—Constitutional Club Premises	—		

BUILDINGS

Nottingham—Additions to Shops and Bakery	Harry Alcock, Architect, Bentinck Buildings, Nottingham	
Dorchester—Block of Offices	Roberts, Son, and Tey, Surveyors, Dorchester	
Llanelli—Residence, Old-road	E. A. Johnson, F.R.I.B.A., Aberavenny	
Woking—Villa, Bath-road	J. E. Parker, Architect, Fumose House, Blackhill	
London, E.C.—Electric Overhead Travelling Cranes	Bradrick, Lowther, and Walker, Hull	
London, E.C.—Electric Overhead Travelling Cranes	Fla. Conash Arms, Bury Port	
London, E.C.—Electric Overhead Travelling Cranes	Moses Davies, Staffordshire-row, Griffithstown	
London, E.C.—Electric Overhead Travelling Cranes	Winter A. Holson and Co., Architects, 52, Albion-street, Leeds	
London, E.C.—Electric Overhead Travelling Cranes	Openshaw and Gill, Architects, 6, Fleet-street, Bury	
London, E.C.—Electric Overhead Travelling Cranes	Herbert H. Dunstall, A.R.I.B.A., 9, New Road-avenue, Chatham	
London, E.C.—Electric Overhead Travelling Cranes	F. Arnett, Architect, 178, Ellesmere-road, Sheffield	
London, E.C.—Electric Overhead Travelling Cranes	Garside and Pennington, Architects, Pontefract	
London, E.C.—Electric Overhead Travelling Cranes	H. W. Booth, Architect, Hopwood-lane, Hildes	
London, E.C.—Electric Overhead Travelling Cranes	E. A. Johnson, F.R.I.B.A., Architect, Aberavenny	
London, E.C.—Electric Overhead Travelling Cranes	J. Gunner, Edware House, Knaphill, Woking	
London, E.C.—Electric Overhead Travelling Cranes	Swash and Bun, Architects, Midland Bank Chambers, Newport	
London, E.C.—Electric Overhead Travelling Cranes	Hussey and Walcott, 1, Gray's Inn-place, W.C.	
London, E.C.—Electric Overhead Travelling Cranes	J. Y. McIntosh, Architect, Cornwalls-street, Barrow-in-Furness	
London, E.C.—Electric Overhead Travelling Cranes	Moulds and Porritt, Architects, 77, King-street, Manchester	
London, E.C.—Electric Overhead Travelling Cranes	E. W. Tunser, Architect, West-street, Gateshead	
London, E.C.—Electric Overhead Travelling Cranes	The Secretary, Lombardstown Creamery, Co. Cork	
London, E.C.—Electric Overhead Travelling Cranes	A. Amisworth Hunt, Archt., 51, Abbeygate-st., Bury St. Edmund's	
London, E.C.—Electric Overhead Travelling Cranes	J. Foster, Brownlow-road, Ellesmere, Salop	
London, E.C.—Electric Overhead Travelling Cranes	J. W. Start, F.S.I., Architect, Colchester	
London, E.C.—Electric Overhead Travelling Cranes	S. Knight and Parkinson, 175, Temple Chambers, Tudor-st., E.C.	
London, E.C.—Electric Overhead Travelling Cranes	Bland and Bown, Architects, North Park-road, Harrogate	
London, E.C.—Electric Overhead Travelling Cranes	Ashworth and Taylor, Builders, Milnrow	
London, E.C.—Electric Overhead Travelling Cranes	Arthur Hill, B.E., M.R.I.A., 22, George's-street, Cork	
London, E.C.—Electric Overhead Travelling Cranes	Lund and Potter, Architects, Worthing, Sussex	
London, E.C.—Electric Overhead Travelling Cranes	T. Taylor Scott, F.R.I.B.A., 43, Lowther-street, Carlisle	
London, E.C.—Electric Overhead Travelling Cranes	J. Didden, Glyde Bath-road, Dorchester	
London, E.C.—Electric Overhead Travelling Cranes	Bland and Bown, Architects, Harrogate	
London, E.C.—Electric Overhead Travelling Cranes	Wm. Griffiths, F.S.I., Architect, Falcon Chambers, Llanelli	
London, E.C.—Electric Overhead Travelling Cranes	H. E. Stedox, A.R.I.B.A., 100, Mosley-street, Manchester	
London, E.C.—Electric Overhead Travelling Cranes	Geo. Handley Johnson, Architect, 38, High-street, Rotherham	
London, E.C.—Electric Overhead Travelling Cranes	Arthur A. Gibson, Architect, 5, Prospect-crescent, Harrogate	
London, E.C.—Electric Overhead Travelling Cranes	Wm. Griffiths, F.S.I., Architect, Falcon Chambers, Llanelli	
London, E.C.—Electric Overhead Travelling Cranes	E. A. Johnson, F.R.I.B.A., Architect, Aberavenny	
London, E.C.—Electric Overhead Travelling Cranes	Corson, Jones, Pe kins, & Bulmer, Archts., 25, Cookridge-st., Leeds	
London, E.C.—Electric Overhead Travelling Cranes	Wm. Griffiths, F.S.I., Architect, Falcon Chambers, Llanelli	
London, E.C.—Electric Overhead Travelling Cranes	Hickton and Farmer, Architects, Walsall	
London, E.C.—Electric Overhead Travelling Cranes	J. H. Cooper, Architect, Lindum-road, Lincoln	
London, E.C.—Electric Overhead Travelling Cranes	Wm. Griffiths, F.S.I., Architect, Falcon Chambers, Llanelli	
London, E.C.—Electric Overhead Travelling Cranes	Dymock Pratt, Architect, Long-row, Nottingham	
London, E.C.—Electric Overhead Travelling Cranes	John Lund, Borough Surveyor, Town Hall, Bedford	
London, E.C.—Electric Overhead Travelling Cranes	Wm. Griffiths, F.S.I., Architect, Falcon Chambers, Llanelli	
London, E.C.—Electric Overhead Travelling Cranes	H. J. Price, A.R.I.B.A., Architect, 24, Low-pavement, Nottingham	
London, E.C.—Electric Overhead Travelling Cranes	E. A. Johnson, F.R.I.B.A., Merthyr	
London, E.C.—Electric Overhead Travelling Cranes	Wm. Griffiths, F.S.I., Architect, Falcon Chambers, Llanelli	

ELECTRICAL PLANT.

Woking—Electricity Meters	Urban District Council	A. B. Mountain, C.E., St. Andrew's-road, Huddersfield	May 29
T. Stirling—Plant for Municipal Electricity Works	Urban District Council	R. Hammond, M.I.C.E., 64, Victoria-street, Westminster, S.W.	30
Kilgobbin—Plant for Municipal Electricity Works	Urban District Council	Kincaid, Waller, and Manville, Engrs., 29, Great George-street, S.W.	30
Dublin—Plant	Corporation	Spencer Harty, M.I.C.E.L., City Engineer, City Hall, Dublin	June 3
Hendon, N.W.—Wiring New Council Offices	Urban District Council	Robert Hammond, M.I.C.E., 64, Victoria-street, S.W.	5
Glasgow—Electricity Meters	Corporation	W. A. Chamen, Engineer, 75, Waterloo-street, Glasgow	10
London, E.C.—Electric Overhead Travelling Cranes	East Indian Railway Co.	C. W. Young, Secretary, Nicholas-lane, E.C.	12
London, E.C.—Electric Overhead Travelling Cranes	City Council	D. Munro, City Electrical Engineer, Exeter	14
Rio de Janeiro—Electrical Machinery	Brazilian Government	The Commercial Department of the Foreign Office, Whitehall, S.W.	July 8

ENGINEERING.

Bournemouth—Bridge over Middle Chine, West Cliff	Town Council	F. W. Lacey, Borough Engineer, Municipal Offices, Bournemouth	May 25
London, E.C.—Electric Overhead Travelling Cranes	Guardians	W. L. Perry, Clerk, Poor Law Office, Londonderry	29
London, E.C.—Electric Overhead Travelling Cranes	Corporation	Charles B. Newton, M.I.C.E., Engineer, Victoria Viaduct, Carlisle	25
London, E.C.—Electric Overhead Travelling Cranes	Urban District Council	Henry Entwisle, Council Offices, Swinton	25
London, E.C.—Electric Overhead Travelling Cranes	Rural District Council	J. Preston, Surveyor, Woodlands, Uttoxeter	27
London, E.C.—Electric Overhead Travelling Cranes	Waterworks Committee	G. H. Hill and Sons, Civil Engineers, Albert-square, Manchester	27
London, E.C.—Electric Overhead Travelling Cranes	Rural District Council	The Surveyor, Waterloo-road, Epsom	28
London, E.C.—Electric Overhead Travelling Cranes	No. 1 Rural District Council	Eugene Caraher, Mayne, Castlebellingham	28
London, E.C.—Electric Overhead Travelling Cranes	Guardians	S. Keighley, Architect, Nicholas-street, Burnley	29
London, E.C.—Electric Overhead Travelling Cranes	Greek Government	The Greek Consul-General, Eastcheap Buildings, E.C.	29
London, E.C.—Electric Overhead Travelling Cranes	Urban District Council	F. W. Vanstone, Engineer, Palace Chambers, Paignton	29
London, E.C.—Electric Overhead Travelling Cranes	Dundee Gas Commissioners	W. H. Tittensor, City Elec. Engr., Duddhoe Crescent-road, Dundee	30
London, E.C.—Electric Overhead Travelling Cranes	New Tramways Committee	Hopkinson and Talbot, 29, Princess-street, Manchester	30
London, E.C.—Electric Overhead Travelling Cranes	Guardians	Jeffery and Skiller, Architects, 5, Havelock-road, Hastings	30
London, E.C.—Electric Overhead Travelling Cranes	Urban District Council	Geo. B. Tonge, Clerk, Great Driffield	30
London, E.C.—Electric Overhead Travelling Cranes	Stirlingshire County Council	Warren and Stuart, C.E.'s, 94, Hope-street, Glasgow	31
London, E.C.—Electric Overhead Travelling Cranes	Corporation	J. F. C. Snell, A.M.I.C.E., Dunning-street, Sunderland	31
London, E.C.—Electric Overhead Travelling Cranes	Water Committee	Warren and Stuart, Civil Engineers, 94, Hope-street, Glasgow	31
London, E.C.—Electric Overhead Travelling Cranes	North Staffordshire Ry. Co.	G. J. Crosbie-Dawson, Eng., N. Staffordshire Ry., Stoke-on-Trent	June 1
London, E.C.—Electric Overhead Travelling Cranes	Guardians	William H. Hope, Architect, Hampton Wick	3
London, E.C.—Electric Overhead Travelling Cranes	Corporation	C. S. Allott and Son, 46, Brown-street, Manchester	3
London, E.C.—Electric Overhead Travelling Cranes	District Committee	Thos. Meek and Co., C.E., 29, St. Andrew-square, Edinburgh	4
London, E.C.—Electric Overhead Travelling Cranes	Urban District Council	Fovers and Penman, Architects, 22, Bath-street, Largs, Ayrshire	4
London, E.C.—Electric Overhead Travelling Cranes	Sheffield United Gaslight Co.	B. Latham, M.I.C.E., Parliament Mansions, Victoria-street, S.W.	5
London, E.C.—Electric Overhead Travelling Cranes	Cheadle Rural District Council	J. W. Morrison, Engineer, Commercial-street, Sheffield	6
London, E.C.—Electric Overhead Travelling Cranes	Corporation	F. T. Inskip, Surveyor, Brookhouse, Cheadle	6
London, E.C.—Electric Overhead Travelling Cranes	Corporation	Kennedy and Jenkin, 17, Victoria-street, Westminster, S.W.	8
London, E.C.—Electric Overhead Travelling Cranes	Rural District Council	W. de Normanville, Engineer, Town Hall, Leamington	10
London, E.C.—Electric Overhead Travelling Cranes	Electricity Committee	James Mansergh, Engineer, 5, Victoria-street, Westminster	10
London, E.C.—Electric Overhead Travelling Cranes	Guardians	Robt. Birkett, Electrical Engineer, Aqueduct-street, Burnley	10
London, E.C.—Electric Overhead Travelling Cranes	Wallasey Urban District Council	Whitwell, Engineer, Fulwood Workhouse, Preston	10
London, E.C.—Electric Overhead Travelling Cranes	Urban District Council	H. W. Cook, Clerk, Public Offices, Egremont, Cheshire	10
London, E.C.—Electric Overhead Travelling Cranes	London County Council	Sterling & Swann, Civil Engineers, Town Hall, Chapel-en-le-Frith	11
London, E.C.—Electric Overhead Travelling Cranes	Committee of Works of Port	The Engineer's Department, County Hall, Spring-gardens, S.W.	16
London, E.C.—Electric Overhead Travelling Cranes	United States Government	The Commercial Department, Foreign Office, Whitehall, S.W.	19
London, E.C.—Electric Overhead Travelling Cranes	New Globe Cement, Chalk, & Co., Ltd.	The Inspector-General of Irrigation, Upper Egypt, Cairo	25
London, E.C.—Electric Overhead Travelling Cranes	Mill Co., Ltd.	The Commercial Department, Foreign Office, Whitehall, S.W.	Aug. 1
London, E.C.—Electric Overhead Travelling Cranes		Oswald Brown, M.I.C.E., 32, Victoria-street, Westminster	
London, E.C.—Electric Overhead Travelling Cranes		Joshua E. Hoyle, Secretary, Crossley-street, Halifax	

FENCING AND WALLS.

Nottingham—Additions to Shops and Bakery	Urban District Council	W. G. Champion, Surveyor, Nottham	May 28
London, E.C.—Electric Overhead Travelling Cranes	Corporation	G. H. Houghy, Borough Surveyor, Town Hall, Lowestoft	29
London, E.C.—Electric Overhead Travelling Cranes	Corporation	The City Engineer's Office, Municipal Buildings, Leeds	June 12
London, E.C.—Electric Overhead Travelling Cranes	Main Drainage Committee	S. J. L. Vincent, Borough Surveyor, Newbury	
London, E.C.—Electric Overhead Travelling Cranes		J. Wilkinson, 5, Church-street, Radham	

FURNITURE AND FITTINGS.

London, E.C.—Electric Overhead Travelling Cranes	Glen Farm	Arthur J. Harris, Clerk, Queen's Chambers, Cardiff	May 25
London, E.C.—Electric Overhead Travelling Cranes	Glen Farm	William Hamilton, Clerk, Castleberg, Ireland	25
London, E.C.—Electric Overhead Travelling Cranes	Committee of Visches	Geo. Dale Oliver, F.R.I.B.A., County Architect, Carlisle	29
London, E.C.—Electric Overhead Travelling Cranes	Stonemason Union Chapters	E. Cripps, Clerk, Union Offices, New Shouham	28
London, E.C.—Electric Overhead Travelling Cranes	Glen Farm	T. Watkins, Clerk, Union Offices, Club Chambers, Pontypool	28
London, E.C.—Electric Overhead Travelling Cranes	School Board	A. W. Hadden, Clerk, Swansea	June 1

PAINTING.

London, E.C.—Electric Overhead Travelling Cranes	Cricklade and W. G. G. Bassett, Chas.	H. Bevan, Clerk, Union Offices, Wootton Bassett	May 2
London, E.C.—Electric Overhead Travelling Cranes	War Department	C. Young, Lt.-Col., Royal Engineer Office, North Aldershot	25
London, E.C.—Electric Overhead Travelling Cranes		A. J. Sharp, Rothes, Scotland	25
London, E.C.—Electric Overhead Travelling Cranes	Guardians	William Henry Spiller, Clerk, Clonakilty	25
London, E.C.—Electric Overhead Travelling Cranes	School Board	W. Hutchinson, Clerk, Barrow	28
London, E.C.—Electric Overhead Travelling Cranes		W. H. Hill and Son, Architects, 28, South Mall, Cork	28

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WANT OF METHOD.

IN the profession and practice of architecture, it is occasionally necessary to fall back on principles and examine the grounds of our procedure, especially at a time when the abundance of materials and resources at our command tempts us to run riot, or to rebel against the dictates of reason and common-sense. The reaffirmation of principles is rendered necessary moreover by the indulgence of architects in various ways, by personal caprice and eccentricities, by license in design. Unless we can take our soundings now and then, we are apt to mistake badness for good taste, and caprice for invention. In all ages of prosperity, of leisure, of ease, and speculation, art has suffered from this state; a wave of degeneracy has passed over the land, architecture has fallen into chaos or an effeminate condition, and we have had periods like those of the Rococo in France, an anarchical reaction from Classic correctness. Although we do not suffer from such extravagance we are apt to lose sight of principles and method, and their restatement may be useful in considering our progress. The absence of method in our work is seen in many of our buildings, first in the style or architectural expression, and secondly in the programme and arrangement of our buildings, and about each of these we may say a few words.

Viollet-le-Duc in his "Lectures on Architecture" makes a few useful observations on architecture of the century just closed, referring chiefly to the importance of method. What he says was addressed chiefly to French architects and students, but they apply equally to ourselves now. He says truly we are "accustomed to confusion: both ideas and principles are wanting to us. The more our buildings are loaded with details, and the richer they are through the variety of their constituent elements, the more do they betray forgetfulness of great principles and the absence of ideas in the artists who contribute to their erection. The studios of our architects are full of instructive appliances, books, and drawings, but when called upon to design even the most unimportant edifice, the artist's intelligence is inert, and refuses to create anything new. His invention languishes under the surfeit of undigested data. Talents, study, and often beautiful execution are conspicuous in many quarters; but rarely an idea, still more rarely the observance of a principle. Our public buildings appear to be bodies destitute of a soul, the relics of a lost civilisation, a language incomprehensible even to those who use it." The reason of this sterility of invention may be attributed to modern social conditions, to the conflict of taste and fashion, to the demands for many things of which our forefathers knew nothing, of modern excitement, love of novelty, &c. Le Duc says it is simply method that is lacking, and we must allow that we have very little method in our work of to-day. Few of the architects amongst us pay so much attention to principles as did our predecessors—men of the school of Cockerell, Penrose, Pannethorne, Pugin, and their disciples; men who, both by their writings and practice, inculcated the great underlying principles of architecture. For some time architects have gone on the old traditions without the aid of principles, till we must admit they have rather lost the sense of true proportion of a right adjustment of the parts of buildings, of

good composition and purity of detail. No doubt there was some reason for the reaction the last half-century has seen. Coldness and formality and strict adherence to Classic and Gothic models were too often the characteristics of the earlier school; their principles and method, excellent as they were in the abstract, were confined and restricted; clothed in a garb incapable of accommodating itself to the use and development of a progressive age; the consequence was people not only discarded the garments but the principles professed. And this has generally been the way with reforms of all kinds. When men have tired of a system a policy or a fashion, they have cast off the good with the bad, the principles underlying the system with the outward expression of it. It has been so at least with architectural styles since the Revival. Both the Classicist and Gothicist professed a system or canon of proportion; but unlike the architects of the earlier Renaissance who retained the principles and often methods of Mediaeval buildings, while casting off the outward semblance, the Revivalists made the fatal mistake of clinging to the forms without regarding the principles of construction and styles that had for centuries been allied to them. We had as an instance Greek porticoes built of brick and stucco, and a pseudo-Mediaeval church constructed of like materials, but without the slightest reference to modern adaptation. Each strove to fit a style hundreds of years old to principles that were no longer applicable, and had been cast off like a disused garment. For it must be remembered, though principles themselves remain the same, their application varies with new conditions. Thus the same principle which dictated to the Greek architect the columnar and trabeated system, actuated the Mediaeval builder in his counterpoised arch system, and suggested to the modern architect some other method of construction. The absence of method creates an embarrassment and confusion proportional to the increase of our resources. We have now a chaos of ideas and materials as this author very justly says, certain principles lie concealed in them which we vainly try to discover and apply. The few who can do so have some method—their work, indeed, bears evidence of method. In another passage the French savant says: "Our architecture is dying of excesses and a debilitating régime. The more abundant our stores of knowledge the more strength and rectitude of judgment is needed to enable us to make a proper use of them, and the more necessary it is to recur to rigorous principles." This debilitating régime, as he observes, dates from the 16th century, when a superficial study of Roman architecture led to the imitation of external features without the alliance of the form with construction and requirements. No trouble was taken to analyse the principles of the Roman method. Thus we have had neo-Greek, neo-Roman, neo-Gothic, neo-Renaissance. What Le Duc says of French architecture in this direction is true also of our English schools. Instead of the caprices of the age of Francis I., or the pompous style of Louis XIV., we have adopted the fashion of Italian, Greek, the Gothic of the 16th century, then of the 13th and 14th, Italian Gothic, Queen Anne, and many more. In all these phases of our architecture we have taken the forms without the corresponding principles that gave them birth; in fact, we have lost sight of method in our work. Of late years there has been some approach to a better state of things. We have been more true to our materials and our requirements, yet there is still room for improvement when we see so much that is misappropriated from Renaissance and other sources. By adopting a method, we shall not fall into those mazes of bewildering form and imitation, but try to go back to the element of our construction and programme for an adequate form: to

emulate once more the Middle Age art, when every element in construction originated a form.

And what are the principles that should guide the architect in the determination of a method? Le Duc, who is an authority we have already quoted, mentions two indispensable modes of adhering to truth. We must be true in respect of the *programme*, and true in respect of the *constructive processes*. The first requires that the architect should fulfil exactly the conditions imposed by the requirements of the case, and the second that he should observe the limitations and properties of the materials, and use those only which fulfil the requirements. These are dominant principles. We may take the latter first, as embodying fundamental ideas of building. Why do we reproduce or imitate forms belonging to an early age or another civilisation, and employ materials unsuitable to these forms? This is so fundamental that it only needs reaffirming to prove to us the absurdity of imitating stone monolithic features like columns and entablatures in brick and cement, or of imitating architectural details that originated from a totally different mode of construction, and from another material. It is true many ancient stone buildings in Asia Minor represent forms borrowed from timber-work. The tradition of wood construction has been preserved by races which have migrated from a timber country into one of stone, as may be seen in buildings of Thebes, where stone reproductions of huts of reeds and mud are to be seen; but these misappropriations were inexcusable—there is no reason why we should follow these early races. The author we have mentioned points out that in architecture we should observe a distinction between a form which is only the reflection of a tradition, and a form which is the immediate expression of a requirement of a certain social condition; and it is only the latter that is desirable. Architects nowadays appear to disregard this distinction by imitating forms in the first sense, in total disregard of the application of the principle above mentioned.

Four rules of Descartes are given by Viollet-le-Duc for the guidance of the architect. They are briefly: first, never to receive anything as true that cannot be proved; to avoid precipitancy and prepossession; second, to divide each problem into as many parts as possible, or as required for a complete solution; third, to follow a certain order, beginning with objects that are simplest and most easy, and ascending by degrees to the more composite; and last to make such a complete enumeration in every field of inquiry as to insure completeness. As applied to method in architecture, the first and third rules are the most important to be followed. The first of these practically repudiates any following of tradition or that allows any deviation from truth in expression. Its positive form of statement is briefly that form should express function, to be limited or qualified by material. Therefore, tradition cannot be followed if it contradicts such a principle. Archaeological studies are useful to the architect if they teach us not to apply the forms, but the principles, that produced these forms; therefore true criticism would lead us to deviate as entirely from Greek forms as our civilisation differs from theirs. Now the modern architect takes a rather confused view of this rule. He follows tradition without observing the distinction above noted; he imitates the form and arrangement of features in old buildings without any reference to principle or function. We see buildings for large congregations, for example, in which preaching is predominant, made to imitate a church in which the sacrament and altar are the main elements; towers erected without belfries. We often see an elevation that completely acts as a blind to the purpose of the building; a gable or an arrangement of

forms evolved from structural motives, rather than from the study of materials and methods. Of the studies and examination of the architectural schools draw any distinction between the mechanical form and principles that evolved it? Is not the student taught to make figured drawings of old buildings, and to copy pictures of certain periods as evidence of his study and knowledge of architectural styles? But is he told also to give the reasons that actuated the architects in the design, and to distinguish the principles that were then derived, or what the same principle would dictate now? He is not. He is told in our colleges that the study of the evolution of the vault, of the plan of a mode of vaulting, and the influence of plan or ritual in the arrangement of cathedral churches? Yet he may know perfectly the usages and characteristics of the principal cathedrals, their plans, dates, and peculiarities, without any knowledge of the principles that produced these modifications. So, too, the student of the architectural classrooms is taught the chronological development and sequence of mouldings; but seldom that analogous mouldings and profiles have been adopted by different races separated by the lapse of centuries. The fact remains, however, that common-sense and the application of principles have suggested mouldings of a similar contour to all who have been guided by truth. In all mouldings like cornices three essential parts are necessary—a weathered surface at the top to throw off the rain, a throating or “drip” underneath, and lastly a bed-mould, or series of members to break up the shadow below. It has indeed been shown that there is an identity between certain forms which always reproduce themselves under the artist's hands when guided by truth. Method will produce results very different in appearance, though identically the same in principle, because the conditions vary.

The rule to follow an ascending order of importance, beginning with the simplest, may be applied to many features and details of buildings. In planning it is a good order to begin with the simple and fundamental requirements, such as position and aspect of main rooms, entrances, position of hall and staircase, before proceeding to consider more complex points of arrangement, and this is the order generally taken in making a first sketch-plan of a building. There should be an order of thought in designing. No one would, of course, begin to design an elevation from the roof, or begin by taking a central and elaborate feature like a gable or tower. The rule would be to block out the principal portions of the façade, to define its broad leading divisions, to sketch in the outline before filling in the detail; and the same order would lead the architect to make his basement the most simple, and to proceed in a block order upwards, adding detail and ornament to the upper portions. This rule is generally ignored, as when we see the most elaborate moulded work lavished near the basement, where we expect solidity, with very sparing detail above. Again, in designing any feature, say a doorway, the designer is apt to lose sight of the simple elements, the proportion of height to width, the simple division of jamb, members upon which the chief effect depends, and to put all his energy into the carving or detail, before he arranges his plan and order of mouldings. There is an order of gradation: the main divisions and groupings of a building should look easy to the eye, and be readily comprehended, and the more composite parts left to the detail.

Again, the rule of order is seen in the development of the three great modes of architecture, that of the lintel being the simplest as embodying simple statical forces, that of the arch and vault as in Roman and Medieval buildings, and, last, the composite structures of modern buildings—really a product of Greek and Roman or Medieval elements, and into which another element, the truss, enters. One of these methods ought to be observed in the design of buildings if we desire to preserve unity and integrity for buildings of a monumental kind, the trabeated or arch system is most expressive, for buildings of a modern and complex kind, like an hotel or clubhouse, or large shop, the composite is more suitable.

Applying the same principles to internal architecture and plan, it would be easy to convict our architects of a great many indiscretions. The adoption of pillars in buildings intended not for support so much as for appearance, as in some congregational churches where an uninterrupted area is important for sight and hearing; the imitation of internal arches carrying no weight, and piers that are not proportioned to the weight supported, are common enough. Indeed, a projecting cornice is an unmeaning feature internally, though we see it constantly in Classic buildings. Large vaults of plaster, imitating massive stone ribs and coffers, are also in direct contradiction to the first rule we have quoted—that form should express function, and be qualified by the material. Yet we see such ceilings in great halls like that of the Northampton Institute, and in many of the large halls of municipal buildings, besides huge pilasters that support nothing. Turning attention for a moment to the programme of buildings, very absurd results arise if we do not understand that the same programme or requirements may mean different designs for different conditions or localities, that the architect must first consider what are “constants” and what “variants.” Thus, in building, say, two churches in different localities, one in a town, and the other in a hilly country district, for the same accommodation, the superficial area must be the same in both, though the height, the lighting, and the materials vary.

Speaking of the programme or requirements of a building, Le Duc shows that the same programme may be complied with by the use of different means, according to locality, materials, resources, &c. Two assembly-halls have to be built in two different localities: at A there are materials of superior quality and a large sum at disposal; at B we can get only brick and timber, and one's resources are small. Shall we give these halls the same superficial area? Yes, for the same number of persons are to be accommodated in each. Shall we make them like one another? Certainly not, since the means at our disposal are not the same. In fact, while complying with the same programme, we shall have to adopt two different designs; therefore the architect must not assume that, because his programme is the same, the buildings should be like one another. By following the same principle, the variations produced by locality, materials, and resources naturally express themselves in the building. Thus the idea of building ready-made designs, and making replicas of buildings like labourers' cottages, dwellings, hospitals, and churches, is founded on a false view of true architecture. Such duplicates could only be produced by ignoring truth and honesty of expression. We have not spoken of the last of the Cartesian rules, the making of a complete enumeration in every field of inquiry; but what is this but classifying facts and data for our use, of having at our command a selection of the best models, types of plan, and other information? We have not said anything of method in proportions, of geometrical ratios which the

best of our ancient buildings indicate; certain proportions of length to width and height, or those geometrical means of setting out the support; and voids and other features of elevation that have been followed in many edifices of the Middle Ages. These can be studied in the works of the author we have noticed, and in those of Mr. Penrose, Mr. Pennethorne, treatises by the late E. Cressy, Gwilt, Billings, Chantrell, &c. The modern practitioner has, however, little inclination or time for the study of proportions founded upon any geometric or harmonic ratios;—perhaps to this indifference or apathy we may attribute the neglect in our modern buildings of any rule of proportion. Probably to the exaggerated study and importance of method and rules of proportion that obtained early in the last century we owe the present indifference and neglect of the subject in the present day.

COMPLETION OF BUILDINGS.

OCCASIONALLY we hear of contractors disagreeing with their employers or the architect upon fundamental questions that a little previous consideration and thought would have rendered unnecessary. A contractor will sometimes object to a stipulation or provision because he considers it unreasonable and unjust—it may be as to the completion of a building by the time specified—but without taking into consideration the tenor of the agreement and the obligation he has bound himself to fulfil. Owing to particular circumstances, it may become a difficult matter to complete the work in the time named; yet, however unreasonable the stipulation, if the employer intended to insist upon the completion, and the contractor agreed to submit to it, the law would require the terms of the agreement to be observed. Numerous instances of such misunderstandings arise: the contractor objects to this or that, or the enforcement of some condition; though in many cases he has made himself responsible by accepting obligations that may be unreasonable in themselves. Cockburn, C. J., once pointed out that while it was intended that a party only meant to secure what was reasonable and just, yet when from the whole tenor of the agreement one party insisted and the other submitted to a condition, however unreasonable it was, a court of justice could not do otherwise than give effect to the terms agreed to between the parties. The judgment arose as to a case of delay in progress of works. It was provided in the contract that if the work shall not proceed as rapidly and satisfactorily as the employer requires he shall have power to enter upon and take possession of the works. Circumstances of this kind are of constant occurrence, and give rise to much acrimony between the builder and the architect. A clause is often inserted to the effect that if the contractor fail to proceed with the execution of work at the rate of progress required, the contract is to be avoided and the materials and implements in possession of the contractor to be forfeited. The employer can enforce this claim, but only before the date named for completion. In this connection we may refer to Mr. Gregory's treatise lately reviewed in these pages. Touching upon “Enforcement of Diligence,” the writer points out that the important thing to be considered as to these provisions is whether they are intended to bring about a fulfilment or an abandonment of the contract. To cancel the contract and to enforce it are two distinct things: the employer cannot do both. If he complete the work at contractor's expense, he must do so in accordance with the contract. The builder may put all the difficulty he can in the way, as to payment for work already done, and moneys withheld, or as to the value of any

implements or materials which may be forfeited; but these questions may remain in abeyance until the contract has been completed, and the final settlement between parties made. If the contract is cancelled, the work under it cannot be completed, and the right to any remuneration or work performed ceases to be operative. Therefore, the necessity arises of the parties expressly providing in their contract for the manner in which the contractor is to be compensated for the work which he shall have performed up to the time at which the right to take the work out of his hands may be exercised, as well as for the value of any plant or materials taken from him, unless they intend that there may be an implied obligation of the employer to pay to the contractor a reasonable price, to be fixed by a jury, for the work performed and for the property seized."

In ordinary contracts it may be sufficient to deduct penalties for delay, to fix a measure of compensation for default, and enable the employer to obtain compensation instead of to recover it by law. Let us suppose that a short delay has been caused by some interference or fault of the employer, and owing to it a flood or storm has seriously damaged the work or extended the delay to several days or weeks. In those circumstances it may be asked, should the provision be operative or not? The question is perhaps open to two considerations. For example, during the delay of a day caused by the employer, the work has been exposed to a stress of weather that has prevented the work being proceeded with for some days, it would be perhaps considerate and fair that the provision for a certain rate per week or day of penalty should not be enforced. On the other hand, the interference or delay caused by the employer may not be considered to justify the subsequent delay caused by stress of weather. The same authority, in discussing this question, observes: "The fact of a part of the delay having been by default of employer, and of another portion of the delay having been due to causes which could not have been active if it had not been for the delay for which the employer was responsible, could have no operation in apportionment of the delay; such fact could only have effect either in rendering the whole provision inoperative, or in a determination to be made by a court as to whether the employer's exercise of the power under such provision was so far consistent with the remedial right of the parties as to be sustainable, or was so inconsistent with such remedial rights as to require to be undone or to be compensated for in damages." Indeed, the writer thinks that the fact that compensation in damages may be obtained through the court for the exercise of a contract right stipulated to arise from a default of the party exercising it, may be a good reason why the purpose for which the right was stipulated should not be defeated by reason of such default.

Certain circumstances may leave the contractor free to complete only within a reasonable time, and it may be desirable for the architect to have the power to grant the contractors an extension of time for completion. There may be extra work ordered, and the contractor is released from the obligation to complete by the time specified, and an extension of time is necessary. The contractor may enter into an obligation to complete within a time to be fixed by the architect in the exercise of a power to grant additional time; but he may not acquiesce in any such arrangement, as it may not be so favourable for him as the time which a jury may give him under all circumstances. This is usually got over by a provision in the contract binding the contractor to accept any extension of time granted. The wily contractor often sets up an excuse for delay on his part, that "extra work" has been ordered to be done within a reasonable

time. These "extras" often get so intermixed with the original contract work, and relate to matters, probably, that must be completed before the original contract could be finished, that it is difficult to separate them. The contractor's excuse often stands. He endeavours to prove that the employer or his architect were quite aware of this fact when he ordered the "extra." Of course it cannot be considered just that the contractor should agree to complete any extra work in a given time. He does not impliedly undertake to do so, unless there is an express provision to that effect. A reasonable time only is intended, by the parties to the contract in ordinary cases. As the architect has usually power to require the contractor to perform extra work, he has impliedly, at least, a power to grant additional time for such work. Architects would do well to remember the ruling in "Thornhill v. Neats," the principle of which is that where a contractor undertakes to complete by a specified date, and another agreement to do extra work within a reasonable time is entered into, and such extra work is so mixed up with the original work that the latter can only be completed at the same time as the former, the original condition is waived, and the employer cannot sue for any penalties for non-completion. In another well-known decision ("Roberts v. Bury Commissioners"), the principle is asserted that a man cannot take advantage of the non-fulfilment of a condition he himself has hindered. In the contract the architect could, for various reasons, give further time, or the employer put an end to the contract, if the contractor did not exercise due diligence. The employer does put this power into operation, and ends the contract, and the contractor therefore brings an action for being prevented from completing contract. The employer pleads the opinion of his architect that the contractor did not make progress; but the latter replies that this delay was caused by default of employer and his architect in supplying plans and drawings, and in setting out land, &c. The architect denied this default, but this was said to be beyond the latter's authority. It was held that the contractor could rely upon the fact, subject to proof that the non-fulfilment had been caused by the act of the employer or his servant. These are points so frequently overlooked by the profession that it is well to restate them. The means resorted to by the architect to enforce diligence in the progress of a building are of different kinds, or the safeguards provided for the due fulfilment of the contract are of several sorts. Which course to pursue is not always most evident, and will depend much on the kind of contractor to be dealt with, and his status; but the architect will be wise who looks forward to the possibilities that are constantly arising, such as contingencies in foundations, delays through bad weather, want of materials, additions and alterations to contract, and frame a clause that will best meet the case, instead of being satisfied with the stereotyped provisions for penalties which are seldom enforced. The end to be kept in the mind's eye is the intention of the parties, and the effect of their powers and rights given are urgent considerations.

SANITARY ENGINEERING.

UNDER this title Colonel E. C. S. Moore, R.E., member of the Sanitary Institute, and the author of several engineering notes and formulae, has brought out a second and revised edition of his bulky volume on "Sanitary Engineering," noticed by us about two years ago. The volume has been remodelled and enlarged, and

Sanitary Engineering. (Practical Treatise on the Collection and Disposal of Sewage, and the Design and Construction of Works of Drainage and Sewerage, &c. By Colonel E. C. S. Moore, R.E., M.San.Inst., &c. Second Edition. London: B. T. Batstone, High Holborn.

is profusely illustrated by well-known engineers and wood-block artists, and contains a large folding plate. In fact, Col. Moore's work has all the appearance of a comprehensive and valuable compendium of sanitary engineering, as it practically deals with the design and construction of drainage and sewerage works, and with the collection, removal, and disposal of sewage, and includes a collection of valuable hydraulic tables and formulae, and tables of velocity and discharge of pipes and sewers computed by Chezy and Kutter's formulae. The very rapid extension of the first edition is a proof of the value of a book of this completeness, and the publisher and author have spared no expense and labour in bringing it up to date, for which purpose it was necessary to consult every engineer of sewerage and sewage disposal works in order to obtain revision, as well as patents and manufacturers of apparatus. Many improvements have been made, as in the hydraulic tables and the addition of logarithmic values, and especially the tables of velocity and discharge of egg-shaped sewers that have been specially calculated. These tables will add much to the usefulness of the work for reference. The importance now attached to bacterial treatment of sewage has received attention by the addition of a new chapter, and the author has also given fresh information as to the question of destructors and chimney-shafts, no fewer than thirteen different kinds being described and illustrated. Not only has the text been increased by about 170 pages, but a number of plates and illustrations have been added. The author acknowledges his indebtedness to several borough engineers for their assistance in furnishing information and in revising. Instructive and revised descriptions are contributed of the Salford sewage works, by Mr. H. Gilbert Whyatt, A.M.I.C.E., borough engineer of Great Grimsby; and of the Southampton drainage by Mr. W. B. G. Bennett, A.M.I.C.E., borough engineer, who has made revisions and given an account of his bacterial system. Mr. W. D. Scott-Moncrieff has a full description of a system of sewage disposal, and Mr. W. J. Dilchin revises his experiments, in addition to other borough engineers and surveyors who furnish interesting accounts of their several works. It would be impossible in a short notice to give the reader any adequate idea of the comprehensiveness of this compilation. In the chapter on "Collection and Removal" we have definitions given of the combined system—that in which subsoil water is excluded from sewers; the separate system involving three sets of drains; and the "partially separate" system; besides the pneumatic ejector system of Shone; the Lillman pneumatic system; descriptions also of middens and cesspools, including the method of working at Rochester, a report of which is given from Mr. W. Banks, A.M.I.C.E., of Manchester's cess-pool-emptying apparatus, the Rocklands, and other well-known plans of collection and removal.

The remarks comparing these systems point to the advantage of water-closets, and when towns like Glasgow, Birmingham, Nottingham, and Leicester have abandoned the pail system for water-carriage, there is strong evidence that the conservancy system in large towns is not a success. In Chapter II. the author gives a summarised account of the systems of sewerage. It is well here to note that the merits of each are placed before the reader. The "partially separate system" appears to recommend itself as being more practicable than the "absolutely separate system," which requires three sets of pipes, the surface and subsoil water each wanting its own set. Mr. W. B. G. Bennett, the borough engineer of Southampton, unquestionably a very difficult town to drain, has made new drains for rainfall drainage only, the reason being that the old sewers were very large, and laid too low or below the high-water level, and it was difficult to discharge them except at low water; therefore, to prevent the flooding of the basements in certain parts during heavy rainfall, a new set of sewers were laid that would permit of discharge at any state of the tide. In the Appendix to the volume Mr. W. B. G. Bennett, the borough engineer, gives a full account of the process, and a plan of the scheme is given showing the new sewer constructed in tunnels under town, and the intercepting sewer. This scheme adopts Shone's ejectors for raising sewage from low-lying districts, and ejectors for emptying storm-water tanks. New soil sewers, storm-water rains, and sewage-disposal works have been devised, and the old outfalls have been abandoned, so that the



THE TOWER
KING'S NORTON



STRATFORD HOUSE
MOSELEY ROAD



PORCH TO DERKSWELL
CHURCH



LEICESTER
HOSPITAL
WARWICK

before our readers. We have now to draw their attention to one which establishes a new record for the arched type. It may be here remarked that this principle of compound construction is at last receiving a tardy acknowledgment at the hands of our own architects, engineers, and builders. Among the more prominent instances of armoured concrete arches may be mentioned the Steyr structure, which has a single span of 110ft., and a rather flat rise of 9½ft. The Topeka bridge comes next with five arches, varying in span from 100ft. to 127ft. Both these arch

bridges are built upon the Melun system. The one to which we are about to more especially refer is constructed on the Hennebic principle, and constitutes at present the largest existing example of armoured concrete arches in the world.

The Châtellerault bridge, for such is the title of the new structural record, is a road bridge, erected over the river Vienne, in the department of the same name, in the west of France. It consists of three spans, of which the central one measures 165ft., and the two side openings 152ft. each. The rise of the middle arch is 19ft., and

that of its neighbours 13ft. From the foundations to the level of the roadway and footpaths, the entire bridge is built of armoured concrete. In the total width of the roadway 16ft. is allotted to the roadway and 5ft. to each of the footpaths. It was not until subsequently to the practical completion of the design, that it was submitted to the operation of actual testing. A short description of the proof tests, and the methods adopted for insuring that they should represent all the various conditions of loading to which the structure would be submitted when in working

which, with the best, interesting and instructive. A number of tests, very little is known except in the case of the testing of arches. At the same time, clerks of works and other assistants are frequently deputed to carry out a thorough testing of all description of structures, of which bridges are the most common. The following account, taken from the *Transactions of the Institution of Civil Engineers*, gives a general idea of the results.

In the case alluded to the test was of a double character, consisting of a static or dead load, and a rolling load. It was applied in three different ways. First, each arch was loaded with a weight uniformly distributed over its whole span; secondly, the load was placed upon only one half of the arch; and thirdly, it was imposed on and about the neighbourhood of the crown. In the first case the arches were allowed to remain before being removed for additional tests were made of the same kind, but in some of the experiments they were left undisturbed for over a week. The load itself was composed of wet sand, and was distributed over the roadway in the proportion of 160lb. to the square foot, and at the rate of 120lb. per square foot for each of the footways. These allowances are a little higher than those used among ourselves, but may be attributed to the advantage, and possess the merit of being on the safe side. Under the most unfavourable conditions of loading, which takes place when each arch is loaded on one half only, the maximum deflection of the central arch amounted to $\frac{1}{2}$ in., and that of the side spans to nearly $\frac{1}{4}$ in.

It is generally observed that the loading of the centre arch has a tendency to throw up or raise the level of the crown of the adjoining spans, when they are at the same time unloaded. This result was also noticed in the testing of *Chislehurst Bridge*. With a load uniformly distributed over the centre arch alone, the rise of the crown of the side spans was about a quarter of an inch. No appreciable deflection was detected when the footpaths, which are carried upon cantilevers, were weighted independently of the remainder of the arches. There was also a complete absence of any "permanent set," for when the loads were all removed the arches resumed their normal position with remarkable exactitude. We may now pass on to consider the effect of the rolling load test, which is intended to furnish as accurate a measure of the dynamical forces as the conditions of the case will allow. It may be at once stated that only a fairly approximate result can be obtained under any circumstances, but it is sufficiently near for all practical purposes.

The rolling load was made up of a double row, that is, of a single row in opposite directions, of waggons, with a weight of eight tons upon each axle, and a steam-roller of sixteen tons, of which five tons were carried upon one, and eleven tons upon the other axle. Under these dynamic conditions the registered deflections did not surpass those produced by the static tests already described. With regard to these tests, the results of which are very satisfactory, it must be kept in view that of all types of bridges the arch is the best adapted to resist stresses occasioned by shock and the force of impact. Its own great insistent weight, *its inertia*, and the general solidity of its construction render it a formidable opponent to the action of rolling loads, however large they may be. It has been said that nothing short of the crushing force of the material can destroy an arch properly designed, properly built, and properly and fairly treated. Without endorsing these remarks in their entirety, there can be no doubt that the arch system, whether in the form of brickwork, stonework, simple concrete, or armoured, resists disturbing influences more *en masse* than other types of structures of timber and of metal, which consist of a considerable number of separate pieces, however well and efficiently they may be jointed and put together. T. C.

PRACTICAL GASFITTING.*

THE use of coal gas as an illuminant has taken a new tenure of office since the introduction of improved gas-burners and the incandescent means of lighting; but gas in its other applications for heating, cooking, as a motive power—is

more than ever a valuable agent. Gasfitting has become indeed a special and important business, requiring a knowledge of the properties, manufacture, and distribution of coal gas, and the best means of economising it, and a really comprehensive handbook dealing with the many modern applications for the student, plumber, and gasfitter was wanted. Mr. Walter Grafton, F.C.S., lecturer on gas manufacture at the Polytechnic Institute, Regent-street, and of the Gas, Light, and Coke Company, has supplied the desideratum. The volume published by B. T. Batford, and containing 114 illustrations, is the outcome of a series of articles contributed to the pages of the *Plumber and Decorator*, and contains just the kind of information the student of gasfitting and the plumber is in quest of. Mr. Grafton deals thoroughly with the economical methods of lighting by gas. The articles have been revised and extended. No doubt the introduction of prepayment meters, incandescent burners and stoves has necessitated a more expert knowledge of the trade, especially of heating and lighting by gas. The first chapters give the fitter information about regulations affecting his trade; the requirements for the proper fitting of pipes in any house are summarised, as, for example, that the pressure fixed by Act of Parliament should be maintained throughout the system, that heating requires more pressure than lighting, that model forms of fittings should be used, that all lines of piping through a building must be laid with a grade so as to drain back into the risers, with no sagging to hold condensation; that drips must be provided when necessary at certain points; that no principal riser must be less than $\frac{1}{2}$ in. in diameter, and must be protected from freezing. That where practicable, all piping should be exposed; but floor-boards covering pipes should be screwed with brass screws; all drop-pipes should be plumbed; that long runs of piping should be firmly supported at frequent intervals, to prevent sagging; that pipes across wooden beams or joists should not be cut, notched, or bored more than $\frac{1}{4}$ in., nor more than 3ft. from bearings; that pipes should not be laid under tiled or parquet floors, stone or metal platforms; that the joints be of red and white lead mixed; that pipes should be of best quality of wrought-iron tube, and all elbow bends, tees, &c., should be of heavy malleable fittings; in exposed positions should be galvanised, and other rules. Tables of the sizes of wet meters and their measuring capacities, &c., are given; also prices of dry and wet meters. The law affecting gas supply, or provisions of the Gasworks Clauses Acts, 1847 and 1871, will be found useful for reference. The operations of running services from mains to house, cutting and tapping mains, are practically illustrated. The author describes a method of making a "tee-joint" when a "wiped" joint is difficult to make. It can be easily made, and it is said to be as good as a wiped joint, and to stand a pressure of from 600 to 800lb. to the square inch. The student may here learn by the aid of diagrams how to drill holes in pipes, to stop leakages, to joint lead piping. Wet and dry meter fixing is explained, and the fitting of gas supply to houses receives careful attention. Many useful hints are given. The author, of course, recommends a separate supply pipe from outlet of meter to stove: when the supply is a branch of the lighting service and the lighting is on, both the stove and lighting suffer, piping should rather be too large than too small, in order to supply the gas at low pressure—i.e., seven 10ths of an inch for lighting and ten 10ths for stoves. Small pipes require heavy pressure, and are ineconomical. The qualities and points of fittings, like pendants with water-slides, are noticed. Gasoliers should be fixed at least 6ft. 6in. to 7ft. above floor, and quite 3ft. from ceiling. To seal the telescopic tubes of gasoliers, glycerine is better than water, as it does not evaporate, but a little glycerine or salad oil, if added to the water in tube, prevents the evaporation of water. The manufacture of gas fires should be studied, and the author usefully points out the difference between radiant and convected heat. The former is most healthful, as the intervening air in room is comparatively cool, while the objects are warmed; but the convected heat warms the air, and not the walls and furniture. The author prefers a combined system for domestic use, as being cheaper and more satisfactory than either method alone. Hot-air stoves are best for offices and public rooms. A vaporising pan is necessary when such stoves are used for warming rooms.

The various types of stoves for grates are illustrated; one tubular-reflector stove and Main's burner for straight and curved bars are recommended. Remarks on gas-fitting for workshops, public street lighting, public illuminations for houses and buildings, for theatres, &c., gas-fitting for schools and for churches follow. These are illustrated by new fittings. The chapter on gas-ranges, cooking-stoves, and water-heaters deals with the subject in a practical manner, and may be read not only with profit by the profession, but gas-consumers generally. The chapter on incandescent gas-lighting describes the main systems, the Welsbach and the Sunlight, both the application of an atmospheric burner to heat a mantle. The author describes the principle of the ordinary incandescent burner, which causes the gas to mix with a proportion of air as will burn with a blue flame. This flame gives no light; but by suspending a mantle over it, white light is produced. If the gas is good, less of it is required to give a good light. The chemical actions that take place in these burners are described. The leading burners, as those of the Incandescent Gas Light Co., the Welsbach (or thoria-ceria) mantle, and other new mantles on the market are noticed. Chapters on chimney-glasses and globes, the use of gas for aiding ventilation, testing apparatus, and meters complete this very useful handbook, which ought to be studied not only by gasfitters and architects, but by all consumers.

BOOKS RECEIVED.

Society of Engineers' Transactions for 1900, and General Index 1857-1900, edited by PERRY F. NURSEY, secretary. (London: E. and F. N. Spon.)—This volume of *Transactions* is well bound and printed, and contains several valuable papers. The "Closing of Breaches in Sea and River Embankments," by Richard F. Grantham, for which the Bessemer premium was awarded the author, is interesting, as the author professionally examined and stopped many of the various breaches in the great destruction caused to low-lying lands in Essex and Kent by the extraordinary tidal breaches in November, 1897, which he describes, and the methods adopted to prevent recurrence. It is illustrated by plates, maps, &c. "The Economical Use of Town Refuse," by Brierley Denham Healey, and the paper on "Recent Practice in Sewage Disposal," by Henry C. H. Shenton, in addition to others, will be found of interest.—*The Cathedral Church of St. David's*, forms the topic of the 24th volume of the handy and reliable works published in uniform style (at however, irregular and widely-separated intervals), by George Bell and Sons. The handbook before us is written by Mr. PHILIP A. ROBSON, F.R.I.B.A., and illustrated from his own photographs, as well as from well-known ones by photographic publishers, from old prints, and also by Mr. J. Taylor Scott's plan and measured drawings, which won the R.I.B.A. silver medal in 1882 and were reproduced in our pages at the time. St. David's has ever been the most inaccessible of British cathedrals, but it is by far the most important architecturally of the four in Wales. Mr. Robson points out that the oldest extant work is by Peter de Leia, the third Norman bishop (1176-98), who replanned the building; but no prelate has left his impress more clearly on the cathedral than Bishop Gower (1328-47). During the 17th and 18th centuries, the Lady chapel and transepts were allowed to fall into ruin, and a century since the west front was rebuilt from plans by Nash. This front was reconstructed by Scott, who underpinned, drained, and restored the building; and little remains to be done structurally except the repair of the ruinous Easter chapels—a work the present Dean and Chapter have in hand. Mr. Robson points out that throughout the building all the work is behind the accepted contemporary types in the matter of architectural advancement, and draws attention to the contrast afforded by the interior, with its rich semi-Arabesque Late 15th-century ceiling of Irish oak over the great Norman arcades and piers, to the almost bald exterior of the building. An interesting chapter is devoted to a description of the ruined bishop's palace, built by Gower and destroyed by Barlow (1536-49), and to the scanty remains of the late 14th-century cloisters and St. Mary's Chapel.

The restoration of the palace portion of Rothesay Castle, chiefly consisting of the banqueting-hall, has now been completed for the Marquis of Bute.

* A Handbook of Practical Gasfitting, for the use of Students, Plumbers, Gasfitters, &c. By WALTER GRAFTON, F.C.S. With 114 illustrations. London: B. T. Batford High Holborn.



CHICHESTER CATHEDRAL: NEW NORTH-WEST TOWER AND COMPLETED WEST FRONT.

CHICHESTER CATHEDRAL.

CHICHESTER CATHEDRAL is the most neglected of all our English cathedrals. The reason is not far to seek. The city is not on the main line, but on a little-used coast-line: it is called the South Down city, is in a diocese of shepherds and farmers. Added to this, the cathedral is usually dismissed with the phrase, "It is very small, and has a new spire." Parker has not one reference to it in his handbook of "Gothic Architecture," and it required Moore, the American, to bring it into notice and place it in its true place in the "History of English Architecture." He grudgingly praises its beauty.

Moore groups Canterbury with Chichester, but he puts Chichester above Canterbury in this sentence:—"It is not like Canterbury, a French design, but it apparently the work of Anglo-Norman architects, who adopted certain features of the growing French style."

It is said that the shrine of St. Richard stood in the presbytery, and here it was that in 1180, after the fire, the Round-arched style made its last struggle for supremacy, and left the issue doubtful here as at St. Joseph's Chapel, Glastonbury. A great future seemed in store for the style, but that future never appeared above the horizon. The last two bays of the presbytery contain the main characteristics of the Round-arched style supplemented by the special features of the Early English style; the pier arcade is round-arched and of two orders: the triforium consists of a round-arch in each bay, enclosing a sub-order of two pointed arches carried on clustered shafts, and the clerestory is fully the developed Lancet style, with a lancet window and arcade; the roof groining is pointed in the transverse ribs, with a fully-developed flying buttress. The combination is harmonious in the extreme, leaving a strong impression that if the

designer of this presbytery had been allowed to develop his ideas in a new church, he would have created an edifice that would have been one of the famous churches of all time.*

The report of Mr. Frank L. Pearson, architect to the committee for the repair of the cathedral, presented in 1900, includes some important proposals not yet put in hand.

The entrance doorway is built upon the foundation of the Norman doorway. It is proposed to remove into the porch the three steps from the position they occupy just inside the western doors, so as to expose the old bases of the Norman doorway. The doorway is to have new caps to some of the shafts, and there are to be repairs to arches and label, and repairs also to wall-surfaces around and above the doorway. It is proposed to repair and restore the Galilee porch inside and out. The large window in the west front requires repair. The report states: "The existence of the large modern tracered window is to be regretted, and it cannot but be regarded as a source of weakness. It would add much to the dignity of the front if it could be removed and replaced by a treatment more in harmony with the 13th-century work, above, below, and around it."

The north-west buttress of the south-west tower requires to be underpinned. The tower generally requires repairs. "Internally the groin cells require some repair, the colour-wash should be removed and the joints pointed; repairs are needed to the seats and the side walls.... and to the groin shafts with their caps and bases."

Cost: The recent works on the west end have cost £8,012; the new works are estimated to cost £2,605. W. V. CRAKE, B.A.

* Mr. Bond's paper at the Institute, reported last week, appeared to shed much light on the vexed question of the origin of groining in the 12th century.

BRITISH AND IRISH BUILDING STONES.—XXVI.

FLINTSHIRE.

THE rocks in this county are Bunter Beds, Coal Measures, Millstone Grit (226), Yoredale Rocks, Carboniferous Limestone, Wenlock Shale and Limestone, Glacial Beds, and Alluvium. Flint is built on Coal Measures and Alluvium. Holywell: Coal Measures, Carboniferous Limestone. Mold: Coal Measures, Alluvium. Rhyddlan: Bunter Sandstone, Alluvium. Rhyl: Alluvium, Bunter Sandstone. St. Asaph: Coal Measures, Alluvium, Bunter Sandstone. There are glacial deposits of gravel, sand, and Boulder Clay immediately under the first four towns. The Bunter Beds of the New Red Sandstone are represented in the Vale of Clwyd by loose red sands and soft sandstones. They extend from Rhyl on the coast to Rhyddlan (Redland), where the Coal Measures run into them; but passing round these they continue south by Bodfari and pass into Denbighshire, in which county they are already described. They furnish no building stones, and the strata are much obscured by drift and alluvium. The eastern boundary of the Flintshire Coalfield is well defined by the London and North-Western Railway from Chester to Holyhead, which runs along it from Chester to Talacre, a distance of about 20 miles. On the east of the railway is the alluvium of the Dee, and on the west the Coal Measures now being described. The coalfield does not touch Chester. It turns south at Broughton to Hope, from which place it passes due west to the boundary of Denbighshire, and then north by Mold, and around Halkin Mountain to Talacre. This coalfield was at one time continuous with that in Denbighshire; but they are now separated by a fault, or faults, the intervening rocks being Millstone Grit and Mountain Limestone. The

Measures yield clays for ordinary and firebrick. The Halkyn (Flint, 4m.), Messrs. J. and C. Jones; Calcot (Holywell, 4m.), Messrs. Lloyd, Sons, and Co.; and Pant-y-Pydwel (Holywell 4m.), worked by the same owners. In a detached mass of Carboniferous Limestone in the extreme north, near Caerwys, there are the following quarries: Trimley Hall (Brymbo 2m.), The Frith Quarries Co.; and Big Rock, both worked by the same company. To the north of the Halkyn district are the following quarries: Garreg (Mostyn 2½m.), Mr. W. Kinnear; Gwernymynydd No. 1 (Mold 2m.), Mr. G. Lester; Jubilee (Rhyll 4½m.), Mr. R. Roberts; Pant-y-Buarth (Mold 3½m.), Mr. E. Edwards; Pen-y-Bryn (Holywell 3m.), Mr. H. Stephenson; Rhydyrnwlyn, The Ruby Brick and Tile Co., Ltd.; Voel No. 2, The Voel Lime and Stone Co.; Voel No. 3, Messrs. Lewis; and Voel No. 1, Mr. R. Roberts (all within three miles of Prestatyn Station). Wenlock Shale is seen along the western slopes of the hills forming the reverse side of the Halkyn range, towards the Vale of Clwyd. It furnishes no building stone of any importance. A recent deposit, known as Tuff or Tufa, is found on the sloping ground above Felin Nant, near Prestatyn; it is a white amorphous carbonate of lime, hard enough to use for rockeries. There are larger deposits in the valleys near Caerwys. Such rocks are formed by springs the waters of which are impregnated with calcium carbonate in solution. This is deposited round twigs, snail shells, and other substances, many of which decay, leaving an open, porous, spongy-looking limestone, more like a coarse pumice than an ordinary rock. The spandrels of many Mediaeval vaults are filled with tufa. It may be seen in Hereford and other cathedral churches; its chief advantage is, of course, its lightness, weighing only 88 lb. to the cubic foot. It is quarried at Pwllwgan, Holywell 7½m.; Mr. J. Manger, and at Afon Wen, Caerwys, by the Denbighshire Portland Cement Co. The Glacial Beds are worked for sand, gravel, and clay for brick-making. The rocks in this county are chiefly worked for limestone: they furnish stone suitable for walling locally, but none for dressings, except the Carboniferous Limestone, which is expensive to work. The Halkyn Mountain Limestone is much used in Liverpool and other large towns in the district.

CHIPS.

The governing body of Christ Church College, Oxford, have decided to carry out the electric-lighting scheme of their consulting engineer, Mr. Morgan Williams. The contract has been placed with Messrs. Hill, Upton, and Co., of Oxford.

The urban district council of Grange-over-Sands have adopted amended plans by Mr. F. E. Dixon, C.E., for a footpath extending from Blawith Point to beyond Berners Close outside the railway along the whole of the sea-front, and they will apply for sanction to borrow £12,000, the estimated cost of carrying out the plans.

Mr. Madet, of the Local Government Board, held an inquiry at Northwich recently into the application of the urban council to borrow £2,000 for the continuation of extensive private street improvement works, and £1,750 for public conveniences in Hayhurst-street, Lock-street, Stanton-road, the park, and for a steam road-roller, van, &c. The proposals were not opposed.

Mr. E. Manville, C.E., of Westminster, has been consulted by the corporation of Leicester with regard to their tramways. He estimates the cost of constructing the tramways on the overhead trolley system at £299,306, as against £644,925 on the conduit system.

The Dierlome Hotel and Restaurant has inaugurated a liberal and enlarged accommodation. The architect, Mr. W. Woodward, has carried out the entire suite of rooms in the hotel, and also a Salle du Restaurant uniformly with the detail which characterised the period of Louis XV.

Mr. E. A. Sandford Fawcett, an inspector of the Local Government Board, held an inquiry at Egremont, on Tuesday, into the application of the Wallasey Urban District Council for sanction to borrow £17,500, for works of water supply, and into the application of the Liverpool City Council for permission to borrow £150,000, the estimated cost of laying a water main from Hatchmere to the outskirts of the Wallasey district. The scope of the inquiry also extended to the application of the Wallasey Council to borrow £7,250 for the provision of a new water supply at Gorse Hill, New Brighton, and a sum of £3,450 for the formation of a new road from Ratten-road to Sea View-road, Liscard.

OBITUARY.

THE death is announced, from an affection of the throat, of Mr. JOHN McKEAN BRYDON, V.P.R.I.B.A., of Newman-street, W., the architect of the Municipal Buildings at Bath, the Chelsea Free Library and Polytechnic, and the new Government Offices in Parliament-street. Mr. Brydon died on Saturday last at his residence, Springbank, Steele's-road, Haverstock-hill, and was buried on Wednesday at Highgate Cemetery. By a melancholy coincidence, the selected architects for the two great blocks of public buildings in Whitehall, Mr. William Young, the designer of the new War Office, and Mr. Brydon, who planned the new home for the Local Government Board and the Education Department on the opposite side of the road, personal friends, and brother Scots by the way, have died within six months of each other, and in the prime of life, and each at the critical moment when the excavations and foundations had been completed, but before a single brick or stone had been laid of the superstructure. Mr. Brydon wrote recently a sympathetic notice of his late friend's life and works for the R.I.B.A. *Journal of Transactions*, and it was understood that he would assist Mr. Clyde F. Young in the completion of his father's *chief d'œuvre*. Born at Dunfermline in 1840, Mr. Brydon was four years Mr. Young's senior, and at the age of sixteen entered the office of Messrs. Hay, of Liverpool. He served afterwards in the offices of Mr. David Bryce, of Edinburgh; Mr. Campbell Douglas, of Glasgow; and Messrs. Nesfield and Shaw, of London, and soon developed a strong but refined type of Classic, to a great extent founded on Italian work of the 18th century, but original and dignified in conception and treatment. On commencing practice for himself, Mr. Brydon made in successive years visits to Italy for the purposes of study, and first gained notice as a skilful designer of furniture. His best known works are the mansion and home farm of Lewins, Kent, built for Mr. Joseph Robinson; extensive alterations to the Chateau de Bouillon, near Besançon, the country seat of M. James Tissot, the Biblical artist; Holmwood, Kent, for the late Lord Bramwell; St. Peter's Hospital for Stone, Covent Garden, and the new Hospital for Women, Euston-road, opened the one in 1882, and the other in 1890; medical schools for women in Hunter-street, W.C.; the Town-Hall, Central Library, and Polytechnic, Chelsea; a Congregational Chapel (jointly with Mr. James Cubitt), at West Kensington, while at Bath he restored the ancient Roman baths in a masterly manner, and built the Guildhall, Victorian Art Gallery, and Technical Schools. Mr. Brydon won the first premium for the High-street, Croydon, improvements, a work never carried out, and sent in noteworthy but unsuccessful designs for the Kensington Town-Hall, and the rebuilding of the Sessions House, Old Bailey. Mr. Brydon joined the Royal Institute of British Architects just twenty years ago, and had read many able and well-written papers before that body, marked by a charming clearness of style and grace of diction. After rendering his fellow members useful service on the Art Committee, and on the Council, he was elected a vice-president, an office which he held at the time of his death. Fifteen months since Mr. Brydon sustained a severe bereavement by the loss by drowning of his son Horace, a promising member of the engineering profession, who was swept by a wave from the deck of a steamboat while crossing from Dublin to Holyhead during a snowstorm; the body was never recovered. We gave a portrait of Mr. Brydon in our issue of Feb. 7, 1890.

MR. WILLIAM JEFFERY HOPKINS, F.R.I.B.A., the well-known architect and antiquarian, of Worcester, died on Tuesday at his residence, Sansome Lodge, in that city, at the advanced age of 80 years. For many years he held the position of consulting architect to the Diocesan Church Extension Society, and was himself responsible for plans for much important church work in the diocese. He was an active member of the Diocesan Architectural and Archaeological Society, and a prominent chess-player. He had been a Fellow of the Royal Institute of British Architects since 1861.

After the conference on Monday night with the arbitration board, the Bricklayers' Unions and the Masons' and Builders' Association of New York announced that the lock-out and strike, which began on the 17th inst., were mutually declared at an end, the employers making certain concessions.

Building Intelligence.

BRAISTOWE.—In furtherance of the work of restoring the ancient parish church of St. Bridget, Braistowe, commenced in 1899, and continued in 1901, the restoration of the tower was begun last year, and has been recently completed at a cost of £1,000, under the direction of the architects, Messrs. Tat and Harvey, of Exeter.

EDINBURGH. The new buildings of the Royal Blind Asylum, situated at 58, Nicholson-street, are rapidly nearing completion. With the exception of internal reconstruction towards the back part of the premises, the whole block is ready for occupation. The architect is Mr. Robert Wilson, of Edinburgh, and the builders are Messrs. D. Craig and Sons. The old buildings, which stood on the same site, consisted of two stories, with heavy masonry fronts, not adapted to the modern requirements of shops. The new buildings are four stories in height, the frontage being occupied by shops. The style adopted is a plain adaptation of Renaissance. To the rear of the centre shop there are a saloon, manager's room, treasurer's room, and counting-room. On the first floor there is a saloon extending to the back, with gallery on each side, leaving a space in the centre for lighting the lower saloon. There is also a board-room, 27ft. 6in. by 14ft. On the second and third floors there are saloons extending the whole length of the front, measuring 50ft. long by 35ft. broad. In the basement and attic floors there is store-room accommodation.

HULL.—The Property Committee of the City Corporation unanimously adopted a scheme prepared by Mr. Hirst, city architect, for the creation of a large central square, close to the Monument Bridge, by pulling down the block of property in Waterworks-street, Junction-street, St. John-street, and Chariot-street. The scheme also provides for a public hall, retiring-rooms, three large reception-halls, and thirty-four new shops, some with ground floor and basement only, and others with four floors. The square will measure 272ft. from north to south, and 216ft. from east to west, and will form an open space in the very heart of the city of a little over an acre in extent. The approximate estimate for erecting the buildings, including the purchase of necessary land, is £92,000. The estimated rentals from the new shops is £6,836, and for the public hall £1,014; net revenue £8,217.

INVERURIE.—Work was begun last week at the extensive new establishment which the Great North of Scotland Railway have erected at the junction of the Don and the Urie at Inverurie, some sixteen miles from Aberdeen. The transference of the locomotive works to this site has been rendered necessary on account of the difficulty of obtaining sufficient ground near the city. Accommodation will be provided for 112 families, which is exclusive of a property purchased in Constitution-street for the less highly-paid workers. The entire 90 acres are not utilised at present, a considerable portion remaining for future extension. The departments that will be in operation by the end of next week will be those for the building and repairing of rolling stock, trimming, and painting. The metal department—including the fitting, turning, and boiler shops and blacksmiths—will not be shifted till next year. In all about 400 men will be employed in the various branches of the establishment.

LANCASTER. St. Joseph's Roman Catholic Church, in Slyne-road, will be opened on July 7. The style is Late Decorated. The building consists of nave, chancel, aisles, side chapels, baptistery, tower, confessionals, and sacristies. The nave is divided into six bays, with a stone arcade on either side supporting the clerestory. The chancel and chapels are separated from nave and aisles by stone arches, as are also the side chapels. The baptistery, which is octagonal in form, projects from the south-west angle of the aisle. There is a five-light window at the west end with richly traceried head; another five-light window over the altar. There is also a great variety of tracery in the windows of the chapels of the Sacred Heart and Our Lady. The windows in the clerestory and aisles are single three-light windows with cusped heads. The church will accommodate 500 people. The nave is 80ft. wide, and the width from aisle wall to aisle wall is 31ft. 6in. The chancel is 26ft. deep, and the transept is 2ft. above the main floor, and approached

by four steps. The height of the church from floor to apex of roof is 47ft. The church is built of York stone, with parapet towers. The architects are Messrs. Pugin and Pugin, of London and Liverpool, and the work has been carried out by Mr. Charles Walker, contractor, of Preston.

MALVERN.—The new isolation hospital at Bundy's site, Half Key, erected from plans by Mr. H. P. Maybury, surveyor to the urban district council, was opened last week. It consists of a three-story administrative block, offices, a scarlet-fever pavilion, and a diphtheria pavilion (each of two wards), two single wards (one for typhoid patients and the other for scarlet fever cases), and a laundry block. The walls are of bricks with stone dressings, and the external walls are plastered with Parian cement, the floors being of pitch-pine. The work has been carried out by local contractors, and the ventilation and heating by Messrs. Shorland and Brother, Manchester.

MAIDSTONE.—A theatre is about to be erected to be built in Brewer-street. It has been planned to seat: Stalls 87, pit 450, dress circle 114, dress circle boxes 8, gallery 350; total 1,009. The front elevation to Brewer-street will be Italian Renaissance in style and executed in stone and brick. The staircases and exit passages will be fireproof throughout, and there will be no winding staircases. A pit saloon, a dress-circle saloon, travelling manager's office, theatre manager's office, and gallery saloon will be provided. The theatre will be built on fireproof principles, and the auditorium will be divided from the stage by a wall carried from the foundations and up through the roof with a parapet, and all doors will be fitted with self-closing iron doors. Fresh air will be conducted into the building by means of flues. It is proposed to use electric light for all purposes, but a supply of gas will be in addition in case of failure. The auditorium, entrances, stalls, dressing-rooms, &c., will be heated by hot-water pipes and radiators. The architect is Mr. J. P. Briggs, of Edingham House, Arundel-street, Strand.

CHIPS.

New buildings have been erected in Larcom-street, Walworth, for St. John's Institute, at the cost of Mr. Arthur Lloyd. They consist of four floors and a basement. Messrs. Dunn and Watson, of Lincoln's Inn Fields, were the architects, and Mr. John Marsland, of York-street, Walworth, was the contractor.

The excavations now going on at the Taranto Arsenal have led to the discovery of a number of Greek and Roman remains. A number of Greek tombs containing vases covered with figures, Roman tombs ornamented with frescoes, and a small temple have come to light. In addition, the old Roman necropolis at Taranto has been found. The tombs are chiefly built of terracotta tiles, or dug out of tufa blocks. The funeral urns contained phials for oil and ornaments, bronze mirrors, hairpins, tiny spoons, spindles, bronze vases, finger-rings, and carved gems. The objects will be placed in the Archaeological Museum at Taranto.

The foundation-stone was laid at Wakefield on Friday for twenty new almshouses under the foundation of Cotton and William Horne, which take the place of a number of dilapidated almshouses in Almshouse-lane, built (or rebuilt) in 1793. The new almshouses are to be erected on a site immediately facing the public park, and will accommodate ten old men and ten old women.

Battlefield House, St. Albans, formerly occupied as a school, has been reconstructed as tailoring premises, from designs by Mr. F. W. Kinnier Tarte, carried out by Mr. E. Dunham, also of St. Albans. The sombre red brick facade, with its high parapet, has been removed, and twin gables, carried out in the half-timbered style of architecture, have been substituted, with shop fronts below. The whole ground floor, some 1,570sq.ft., has been utilised for shop purposes.

Under the auspices of the London Baptist Association, a new church, with seating accommodation for 1,000 worshippers, has been opened at East Ham.

The Hogarth House Preservation Committee appeal for funds to enable them to purchase and repair Hogarth House, Chiswick, in which the great pictorial satirist spent a good deal of time between his acquisition of it in 1749 and his death in 1764. The house has been sold as part of a property which is about to be developed for building, and it is feared that unless assistance is promptly forthcoming it may either be pulled down, or, by being let in tenements, permitted again to fall into the condition from which the late owner rescued it.

COMPETITIONS.

KITCHEN. The Library. Mr. Robert Spinks, F.R.I.B.A., of London, has completed his task of adjudicating upon the 146 competitive designs for the new public library. The first premium of £50 is awarded for the design submitted by Messrs. Arthur McKewan and James A. Swan, of Newhall-street, Birmingham; the second, of £30, for that of Mr. G. S. Gibson, 4, Gray's Inn-square, London; and the third, of £20, for that of Mr. Thos. Davidson, A.R.I.B.A., Great Ormond-street, London. In adopting the award, the Free Library Committee recommend the town council that the premium for the first set of designs shall not be merged—as intended in the architect's commission, and that the successful set shall be carried out.

MUSWELL HILL. The design submitted for the Presbyterian Church, Muswell Hill, N., in a recent competition limited to five architects, under motto, "New Era," has been adopted, and the authors of the design, Messrs. George Baines, F.R.I.B.A., and Reginald Palmer Baines, 5, Clement's Inn, Strand, W.C., have been instructed to proceed with working drawings. The style adopted is a free treatment of the Perpendicular period of Gothic architecture. Externally the building is to be faced with whole white flints, the dressing being of red Costessey work. A bold square tower, terminating in a quaint spirelet, forms a prominent feature at the angle of the block, the site being at the corner of two roads. There are three bold and richly-moulded doorways in front, flanked by buttresses, and a handsome seven-light traceried window in central gable, and traceried work in the apex of gable. The plan approximates in form to a Greek cross. The ceiling internally will be vaulted in wood, the large central vault being carried up higher than others for effect and better ventilation, and being carried upon clustered green marble columns, with moulded stone bases and carved stone capitals, and these support four main moulded arches, and other smaller ones opening to the walls. The windows will all be filled-in with ornamental lead lights. Electric lighting, and low-pressure hot-water heating apparatus. Seating accommodation will be, on ground floor 750, in front gallery 100—total 850; or a mixed congregation of about 1,000 persons.

The parochial buildings erected in the parish of All Saints, Northampton, at a cost of £2,000, as a memorial to the late Canon Hull, for 22 years the vicar of the parish, were dedicated last week by the Bishop of Leicester.

At Sheringham, near Cromer, a turret has been added to the water-tower in the main street, from designs by Mr. T. Inglis Goldie, A.R.I.B.A., of Norwich, and in it has been placed a public clock with three dials. The builders were Messrs. T. and R. Boxhall, of Sheringham, and the clock was supplied by a Norwich firm. The inauguration took place last week.

Mr. J. Williams Dunford, M.S.A., has been elected chairman of the highways and general purposes committee of the Walthamstow Urban District Council.

The memorial-stone of the new public hall, Port Ellen, N.B., was laid with full Masonic honours on Tuesday. The hall is being erected as a memorial of his late father, by Mr. Ian Ramsey, of Kildalton, and the architects are Messrs. Sydney Mitchell and Wilson, Edinburgh. The building is in the Gothic style.

To perpetuate the memory and work of the Rev. Father Ullathorne, S.J., who for nearly half a century was rector at Lowe House Mission, St. Helen's, Lancs, it has been decided to erect a boys' school at a cost of about £5,000.

The new offices, police-station, South Shields, are being warmed and ventilated by means of Shorland's patent Manchester grates and special inlet tubes, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

The Bishop of Southwark recently dedicated a monument in Titsey Church to the memory of Mr. Granville Leveson-Gower, of Titsey Place. The memorial consists of a recumbent figure in Carrara marble by Mr. Thomas Brock, R.A., on an altar-tomb of Hopton Wood stone, which divides the sacarium from the Leveson-Gower Chapel. A canopy above the tomb, enriched with figures of angels and heraldic shields, was designed by the late Mr. J. L. Pearson, R.A., the architect of the church, and was carried out by his son, Mr. F. L. Pearson. The figure lies in repose, with the hands folded on the breast over a book, and the greater part of the body is covered by drapery in broad folds,

Engineering Notes.

ST. FILLANS, ABERDEEN.—The first of the two sections of this important line, which will connect Oban on the west coast of Scotland with the east coast by a direct route, is now almost complete, namely, the section from Oban to St. Fillans, some six miles in length. Work was commenced in June, 1899, by Messrs. J. Paton and Sons, contractors, Glasgow, who have also recently secured the contract for the section from St. Fillans to Dundee. But for heavy rock cutting on the west side of the line, it would have been completed long since. This cutting is now within a few days of completion, and the permanent way is laid with this exception. The line will be ready for opening to St. Fillans about the middle of July.

CHIPS.

AT ST. ANDREW'S, EMBOROUGH, on the eve of Whit-Sunday, a stained-glass window in the chancel was unveiled, the design being "The Last Supper." The window, which was in the nave, given by Mr. R. J. Pettward, of Emborough Hall, were also dedicated at the same time to the glory of God, the new organ being "Our Blessed Lord Washing the Feet of His Disciples"; the second, "The Home at Bethany"; the third, "Christ Feeding the Multitude"; the fourth, "Our Lord Calling the Apostles." By the munificence of Mr. Pettward, the church was rebuilt in 1878.

A work of some value to Bradingham is proceeding on the south side of the town, where Mr. Pitt, the owner of the Belvedere Estate, is having erected a sea-wall along the full length of his estate—consisting of some quarter of a mile. The piling has been finished, and about three weeks ago the work of erecting the stone wall began. It will cost probably £20,000, or perhaps £25,000.

The Grosvenor and Low Gun-hans have formally inaugurated the new cottage homes which they have erected at Shotley Bridge. There are ten cottages, and each is under the care of a foster-mother, two having in addition foster-fathers. The total accommodation provided is for 152 children. The whole scheme has cost about £20,000, including land and buildings. The architect is Mr. W. Lister Newcombe, of Newcastle-on-Tyne, and the builders were the executors of the late Mr. W. C. Tyrie.

A stained-glass window from the designs of Mr. George Ostrahan, in memory of our late Queen, was unveiled on Sunday week at St. Peter's, Streatham Hill, by the Bishop of Southwark. The subject of the window is a representation of Tennyson's lines, "Self-reverence, Self-knowledge, Self-control. These three alone lead life to sovereign power." In the left-hand light is seen the figure of Self-reverence, seated on a marble throne holding a scroll, on which are inserted the words, "God created man in His own image." The centre light contains the figure of Self-knowledge, also seated on a throne. The right-hand light contains the figure of Self-control, whose hands are manacled, and whose waist is girded with the knotted rope, the three knots of which are symbolical, as in all monastic habits, of the virtues of chastity, poverty, and obedience. The manacles which are fastened to her wrists have two of the chains broken. In the three windows on the Royal coat-of-arms—the Rose, Shamrock, Thistle, and Leek.

The Dean of Bristol has just issued a statement concerning the works of restoration which have been carried out in his cathedral since 1892. The works have cost £20,000, all of which has been subscribed and have included the reparation of the central tower, the Lady chapel, the choir, and side screens. The Dean adds: "It must not be supposed that there is nothing more to be done in the cathedral by way of improvement. We still want the schola in harmony with the reredos (the cost of which would be about £300), the screen, the foundations of which are already laid (about £1,350), and an organ (about £3,000) more worthy of the cathedral than our present instrument can be said to be."

Penzance Town Council have agreed to offer premiums amounting to £31 10s. for plans for laying out the field at the western end of the promenade, given by Mr. T. R. Bolitho. It is proposed to spend £1,000, and to provide a large pavilion or winter garden.

The City Council of Exeter have appointed a committee for the purpose of obtaining plans and estimates for the new Exe bridge, and for the acquisition of such property as may be required for the widening of Alington and Okehampton streets.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter should be addressed to the EDITOR of the BUILDING NEWS, Clement's House, Clement's Inn Passage, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

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So. Messrs.—No. We can still supply our bound volumes containing the articles.

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"MORON." We find that it is the yellow tint of your paper and the dirty state of the drawing which led to the idea that it was a mounted tracing. We find that this is an error, but it does not alter the position accorded you in the competition.—"ENTHUSIAST" (Thank you for suggestion, but usually the greatest successes result from the ordinary and simple subjects. Anything like a problem necessitating some little extra trouble and special knowledge is not popular, and meets with a poor response. This is perhaps not so uncomfortable as you appear to think.)

DRAWINGS RECEIVED.—"Pat McKinn," "Sandingham," "Iona," "Primus," "Hare," "Tantara."

Intercommunication.

REPLIES.

11718.—Baptistery. A good arrangement for a baptistry is to make it project in the form of an apse from the west end of nave, and of its whole width. The endwalls or piers may be on both sides ending the aisles, if there are any. Several examples of this arrangement may be seen in London. St. Peter's, Streatham, is a good example, where the baptistry is a semi-oval apse, and there is a parish-room below. Rolled steel joists will do very well, or bolted C.I. girders, to support the outer wall, if not carried down. If, as I infer, the latter plan is intended, the girders may be lined in the manner suggested, with marble steps, if the girders are above the floor-level. T. Wells does not say where the baptistry is to be placed on the ground floor. G. H. G.

[11719]—Natural Ventilation.—Your querist must have read your back volumes carefully if he does

not know that this old controversy has long ago been exhaustively thrashed out, and that you are little likely, I imagine, to waste space in reopening it. Natural—that is, automatic—ventilation is the best and only universally applicable system. Special buildings, of course, require special study and expert advice. Better take these at the hands of a long-established firm like Messrs. Robert Boyle and Son—whose system of automatic ventilation has stood the test of so many years' experience in so many hundreds of buildings of all descriptions.—H. G. G.

[11721].—Bay Windows in London.—The rules as to projection of bay windows in the Metropolis are to be found in section 73 of the London Building Act, 1894, subsection 5, where it is stated that in a street not less than 10ft. in width, or to a building the front wall of which is not at a less distance than 40ft. from the opposite boundary of street, bay windows may be erected on land belonging to the owner, notwithstanding the provisions of the Act relating to buildings beyond the general line of buildings in streets, provided such bay window do not project more than 3ft. from the main wall of building, do not project within the prescribed distance of centre of roadway, are not nearer the party-wall than the bay's projection. They are not to be erected higher than three stories in height above footway level, nor to exceed three-fifths of the frontage of building.—O. S. S. S. S. S.

[11722].—Size of Drains for Houses.—Drains of stone ware are to be preferred for houses, and should be highly vitrified and salt-glazed, and smooth inside, and free from fire cracks, and quite straight. Pipes 4in. diameter are sufficient for ordinary drainage. The joints should be set in cement mortar. The pipes should be centred with strands of tarred gasket.—G. H. G.

The Wolverhampton Corporation, after several delays, have now commenced the work of laying down their new scheme of tramways for the borough. The first section of the line to be dealt with will run from the Dog and Gun Inn, Tettenhall, to Queens-square, via Newhampton-road, and on Monday Alderman C. T. Mander, the chairman of the Tramways Committee, performed the ceremony of "breaking the ground" of the line of route at the junction of Tettenhall-road and Newhampton-road. Mr. H. Holloway is the contractor for the line.

The Crowmarsh Rural District Council have appointed Messrs. Beesley, Son, and Nichols, of 11, Victoria-street, Westminster, to prepare a scheme of water supply for the district of Woodcote.

The Bishop of Reading has consecrated a new church at Grove, near Wantage, which has been erected at a cost of £2,000. The pulpit, which has been removed from the old church, was first occupied by Dr. Pusey at the opening of the church in the year 1837. The font, too, which originally came from Pusey, near Faringdon, Berks, is the one at which Dr. Pusey was baptised.

The new post-office for Troon, situated at the corner of Ayr and Academy-streets, was opened on Friday. The post-office buildings are three stories in height, and have been erected at a cost of £6,000.

During the last twelve months there has been a remarkable development in the work of erecting new buildings in Wellington, Salop, and district, and many dilapidated buildings have been demolished. The urban council have decided to take proceedings for the removal of slums in High-street and other parts of the town.

On behalf of the Local Government Board, Mr. W. O. E. Meade-King has held an inquiry at Rowledge, near Colchester, into the application of the Lexden and Winstree Rural District Council for leave to borrow £3,100 for the purposes of water supply for the parish and the purchase of certain property.

The nave of the ancient crypt of the Priory Church of St. John at Clerkenwell was opened on Tuesday for parochial purposes by Earl Egerton of Tatton, Chancellor of the Order of the Hospital of St. John of Jerusalem in England. The crypt was erected by the Knights of the Order of St. John about the year 1100. This was the original chapel, and consists of five bays, with side aisles to the eastern part, that on the north side being of one bay only, and that on the south of three bays. There are chambers of minor importance on the north side, westward of the aisle. In the latter part of the 12th century, about the year 1175, the erection of a grand priory church having been determined on, the original chapel, with the extension then made to the eastward, became a crypt under the choir of the new church. This church was consecrated by the Latin Patriarch of Jerusalem, Heraclius, in the year 1185. The crypt has been restored and fitted up with the electric light at a cost of over £800.

A contract has been entered into for the erection of a new imperial hall for Dulwich, on a freehold site in Grove Vale, East Dulwich.

Col. H. E. Durnford, R.E., has held an inquiry at Great Wyrley respecting an application by the Cannock Rural District Council to borrow £3,500 for the purpose of a water scheme for the parish of Great Wyrley. Evidence was given which showed that there were over 200 houses without a proper water supply, and eight cases of typhoid fever had been traceable to this cause.

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ACRE.—BUSINESS PREMISES, MOUNT STREET, W.—SKETCHES

PART IN THE BANQUET HALL, GLASGOW MUNICIPAL BUILDINGS.

Mr. WILFRED LUTHER, R.S.A., the architect employed by the Glasgow Town Council to complete this building designed by the late William Young, has been the scheme of decorating the Glasgow Municipal Buildings in hand for some time, and the artist's illustration is from a photograph of the paintings at the end of the banquet.

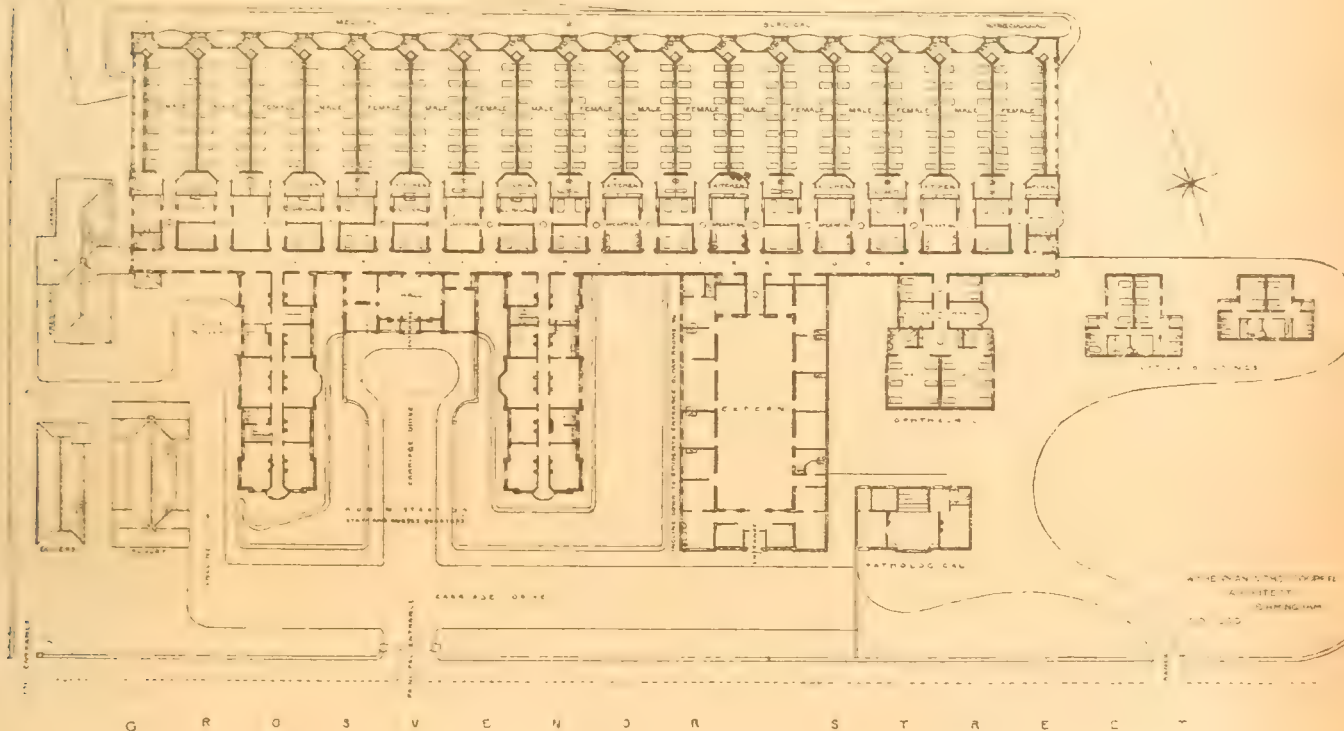
boards, and hanging on her City Arms." We
presented to the Town Council for the photo-
graph which we have reproduced. It was given
to Messrs. L. and R. Annand Sons, Glasgow.

1. The first part of the paper is devoted to the study of the properties of the function $f(x)$ defined by the equation

the possibility of such a thing, the question of a central plan for hospitals has been discussed, and the employment of antiseptic treatment, such as in hospitals and nurseries might be considered health manufactories, and that they should be planned and designed on the lines of a well-drained manufactory, in which the principal considerations are perfection of work and its accomplishment with ease and despatch. The alleged defects of pavilion buildings of several stories are the distances apart of the wards, the necessity for staircases and lifts, the excessive labour to the staff, and the difficulties of administration. Mr. Henman has endeavoured to show that it might be better to spread out the wards on one story only, placed side by side, principally lighted by continuous lantern lights. This design for the new hospital for Belfast realises this idea. The architects are Mr. William Henman and Mr. Thomas Cooper, and the contract was let last autumn to Messrs. McLaughlin and Harvey, builders, of Belfast and Dublin, who have already made good progress with the works, under the direction of Mr. G. S. Flower, clerk of works. The King has graciously expressed his desire to lay the foundation-stone a little later in the season, so that Belfast will be honoured by a Royal visit for this purpose. The accommodation in the new building will be for 300 patients, 8 resident medical and surgical officers, 76 nurses, and 32 male and female attendants and servants. The principal entrance to the site of six acres in extent, liberally granted by the Corporation of Belfast, is from Grosvenor-street. The administrative buildings, of four stories and basements, in three separate buildings on the north side, provide a spacious entrance-hall (above the porch of which is a statue of Queen Victoria), also accommodation for the resident staff, the nurse-

each honorary physician and surgeon having a consulting room. Between the wards, with each group of four medical wards there are a large classroom and two clinical rooms, and to every pair of surgical wards there is an operating room. On the north side of the main corridor are the ophthalmic wards—two of six beds and two of two beds. At the south end of the main corridor of the 17 large wards is a separation ward for two beds. A small kitchen is in each group of wards, except for gynecological cases, where the department is self-contained, with separate operating room. Bath-rooms and conveniences are attached to all the principal wards, and linen cupboards, stores for patients' clothing, &c., are provided. Two detached buildings are for isolation purposes, one being for six and the other for four beds, with kitchens, conveniences, and nurses' bedrooms. To each of the 14 bed-wards there is a large window at the south end, opening on to a balcony, and from which there is a view over park-like grounds to the hills beyond, and from end to end of the wards there are lantern-lights, glazed on the slightly sloping sides. Consequently, as the only lofty buildings are on the north, whatever sunlight there may be throughout the day is admitted to the wards, or may be regulated to requirements by the provision of green drawn-down blinds. To the west of the administrative buildings is the "outpatients" or "extern" department, consisting of a large waiting-hall with number of medical and surgical consulting rooms around on the ground-floor level, and in the basement there are retiring rooms for the use of students attending the hospital. The appliances for securing ventilation are in a separate building at the east end of the main corridor, connected at the basement level by the principal air-inlet duct, which is 20ft. high by 9ft. wide at that end. There will be a complete steam laundry in a detached building on the premises, together with disinfecting apparatus, and a destructor. The pathological department, including a laboratory, post-mortem room, mortuary, and a viewing room, divided off by a glazed

GROUND FLOOR PLAN



ing hall executed by Mr. Alexander Roche, R.S.A. The scene depicted represents the following incident thus described: "The legend tells how Langvareth, Queen of Strathclyde, lost a ring that King Rederech, her lord, had given her for a love token, wherefore he would have had her slain; but she besought the aid of Saint Mungo, who bade a fisherman cast his net into the Clyde, whereby a salmon was caught. In his mouth was found the lost ring. Thus Glasgow

home, the attendants' and servants' quarters, the dispensary, and the kitchen departments. On the south side of a main corridor running east and west are the wards, side by side, without intervening space, and practically under one roof. Each ward is for 14 beds, eight of them being for medical, eight for surgical, and one for gynæcological cases, with their accessory rooms, approached by branch corridors. The wards are arranged for male and female patients alternately.

screen, are provided for in another detached building. The buildings will be attractive in their simplicity, as well as their internal arrangements. The cost per patient's bed will not exceed £100, an exceedingly low figure for such a complete and up-to-date hospital. The drawing illustrating the wards block, which we publish to-day, is now at the Royal Academy Exhibition. The upper drawing illustrates the entrance and administrative buildings.

Nicholas Lechmere has left us a brief but interesting description of the house as he found it in 1650, the year of his inheritance of this estate. His description is given in his diary, and is a most interesting manuscript briefly descriptive of the house, but entering into no details of its history, then, or of its subsequent alterations. The restorations recently carried out by Messrs. Lewis Sheppard and Son, of Worcester, incorporate the ruins left by the fire of October, 1896, and as the debris was removed, certain features were revealed from time to time clearly showing that the house* was more ancient and had undergone many more alterations than anyone since the time of Sir Nicholas Lechmere could be aware of. Severn End is said to have belonged to the Lechmères since the time of King William the Conqueror. No authentic date can be assigned to the building of Severn End. The late Sir Edmund A. H. Lechmere, who died in 1890, but it seems more probable that portions of the structure, some still remaining, must be at least a century older. For instance, the lower portions of the two chimneys flanking the entrance, and a portion of that at the north-west corner;—in the latter the bricks are only 1½ in. thick, with very thick mortar joints. The kitchen and the room over were of the older date. It was very apparent that portions of the roof had been raised, which would account for the unusual treatment in the wall-framing just over the first-floor windows of the west front. The object of this no doubt was to increase the number of bedrooms, although those in the roof were very poor ones. Prior to this alteration in the height of the building, the rooms of the first floor were partly in the roof. It is very probable these and other alterations or additions may have been made at the end of the 16th century. During the process of the restoration the entire form and plan of the house in the 15th century was discoverable. From what was seen of the foundations and portions of the walls, it was very evident that the centre part of the house between the two wings consisted of a large hall, 52ft. long and 20ft. wide, open to the roof (probably not unlike that at Bitsmorton Court), having two large fireplaces, the chimneys of which still form a very striking feature in the east elevation, and between which was a recessed doorway, the door and frame being flush with the inner face of the wall of the house. At the north end of the hall was the withdrawing room, and on either side two other small rooms, with a few bedrooms over, while at the south end were the kitchen and a few other domestic offices. All this was quite consistent with the domestic life of those times when the great hall was the common living-room, where the household, the guests, retainers, and hangers-on were entertained and received hospitality at the same board, on which the salt-cellar was considered to divide the table into two distinct parts, guests of more distinction being placed above the salt, while the places below the salt were assigned to inferiors and dependants. The great hall was frequently used as the common bedroom. Very few bedrooms sufficed in those days, when it was common for several persons to sleep in the same room, privacy being but a distant thought. Also some of the cooking was done at the great hall fireplaces, and in evidence of this the large iron crossbar still remains from which the pot hooks and crooks were suspended. Other interesting discoveries were made, pointing to the fact that some of the chimneys originally contained but one flue, and this of great size, necessitating a very large stack, and at least four of these chimneys had been altered; additional fireplaces had been formed on the first-floor level, and separate flues where possible, but some of the flues did duty for two or more fireplaces. This somewhat confirms the previous statement that the hall originally had no bedrooms over it, and that there were but very few bedrooms in the house. Judging from the character of the brickwork, it was very evident that these alterations were made long before Sir Nicholas Lechmere's time. He recorded in his diary that he

rebuilt many of the chimneys; but in doing so he used bricks of slightly different texture and colour, and thicker ones than those formerly used: consequently the work he did was traceable to an inch, and the building of the clustered shafts could be attributed to him, but not the bases of the chimneys. Sir Nicholas Lechmere, Knight, who was a famous lawyer, a Baron of the Exchequer, and generally known as Judge Lechmere, has left behind him a most interesting diary, wherein he recorded the many alterations and additions which he made to Severn End. In 1656 he began by building a new kitchen and bakehouse, with the rooms over. These additions comprise the southern end of the house, beyond the still older kitchen. The outer walls seem to be of earlier date, and were those of a one-story annex. It is very probable that he adapted the lower story to the purpose of a kitchen and bakehouse, and added the rooms over. The walls of the upper story were of half-timber framing, and at a subsequent period were encased with brickwork, the latter being removed during the recent restoration. Also in 1656 the Judge built the north wall of the garden and certain outoffices. In the following year he extended the walls along the south and west sides of the garden, and built the garden-gate immediately opposite the west entrance, thereby enclosing the garden adjoining the west side of the house. Here was the principal flower garden, laid out in formal parterres, in patterns of curious design, some of them edged with box. In 1658 he built the great barn and planted the chestnuts in Upper Lechmere field, some of which still remain. In 1659 the wall extending from the corner of the stable to the parlour chimney was built, and in this year also the furnace was set to brew with coke, of which the ironwork cost £2 14s. This no doubt was a new invention, to which we owe our present method of setting furnaces. The sum paid for the ironwork was certainly very great as compared with present prices. In the year in which King Charles II. was crowned (1661) the Judge built his study (since known as "Justice Room") in the south-west corner of the garden; he having a comparatively small house and a family of eleven children, it is easy to imagine how very much he needed such a study. It is an extremely pretty and quiet retreat, and is well preserved. It was restored in 1858 by the late Sir E. A. H. Lechmere. The Judge makes no mention of the garden walls adjoining the study, but they appear to have been built about the same time, while in 1662 the "Mount Walk" was finished. The stonework, writes the Judge, was done by one Goddard at the rate of 6d. per foot for the coping and 4d. per foot for the steps, including stone and labour, but not carriage. At the present time the cost of the masonry would be about six times greater. In 1663 the cart-house at the end of the great barn was built. In 1668 extensive additions and alterations were made to the house. The Judge recorded that he made the cellar under the buttery, built the chimneys adjoining, and made the whole front new between the hall chimneys and those new chimneys, *en multis aliis*, which means many other additions and improvements. He preserved the external facings of the brick and stone work, inserted the small window near the ground line in order to light the new cellar, partly closed up the old fireplace, and rebuilt the inside and upper portions of the chimney, forming at the first-floor level two small fireplaces and on the attic-floor level one other fireplace for the respective bedrooms, one of which is known as the King's Room. Thus there were three fireplaces to two flues. The companion chimney, that of the hall, had one fireplace and flue formed in it in the first-floor level, but it was not otherwise altered. All these alterations were clearly distinguishable. The very beautiful central gable and the entrance beneath it are therefore to be attributed to the artistic mind of the Judge. Prior to this the original door and frame receded about 4½ ft. In 1670 he built the new brick gable, which Mr. Sheppard takes to have been that at the north-west corner of the house, in substitution for the earlier half-timber gable, but about this time another brick gable was built in place of the half-timber work over the east side of the hall. The Judge at this period seemed to have totally abandoned the half-timber style in preference for the more solid brick walls, and in 1673 he began the brick buildings on the

north and south sides of "Ye Green Court." A builder, John Averian, undertook to provide all materials and to execute the work fit for habitation for £250. Sir Nicholas, however, seems to have doubted his builder, for he adds, "how he will perform time will show." He afterwards wrote in his diary, "He fayled in all things." Considering the extent of the work, it is not surprising the builder failed, financially at least; but his work could not have been very bad to have withstood the test of time for 2½ centuries. These additions with their numerous gables and clustered chimneys are quaint and in pleasing contrast with the earlier half-timber portions of the house. From 1805 to 1896 the house was occasionally occupied as a farmhouse, but was vacant for many years. The house is grouped on three sides of the quadrangle. The centre portions consist chiefly of timber framing and stucco, the principal entrance being in the centre, between the two massive chimneys, the latter a curious mixture of brick and stone work, while the wings, with their many quaint gables, are built with bricks, and which, with the very handsome lead spout-heads, having shields bearing date 1673, and the arms of Sir Nicholas Lechmere, together with the lattice windows, makes up a very picturesque composition. The court is inclosed on the east side by an iron palisading and a floriated wrought-iron gate, the pillars on either side of which are surmounted by lions, sejan, very rudely carved in stone—so rude, in fact, that they have been described as dogs, and certainly they resemble dogs very much. The gate was a small one, and visitors arriving in a carriage or on horseback had to alight at the gate and traverse the whole length of the court on foot. The west side of the house is less formal but equally picturesque, and presents a mass of unequal gables, which, with the oversailings of the upper stories, the oriel windows, corbels, and barge-boards, all more or less enriched with mouldings and quaint carvings, presented a very characteristic old Worcestershire residence. Internally the house had but little of architectural interest, although there were, here and there, bits of detail sufficient to excite one's mind and to show that the fittings, and especially the few large fireplaces and chimney-pieces, had undergone considerable alterations. The most striking features, however, were the inconvenient arrangements in plan. For 90 years (since 1805) this house was unoccupied by the Lechmere family. Apart from its inconvenience it had become very dilapidated. Decay and weakness seemed to prevail; it was cold and comfortless, and the sanitary arrangements were almost nil. The present baronet, however, did much to remedy this state of things, when he took up his residence there about five years ago. In the works of restoration no alteration has been made in the general form and outline; it was preferable to preserve the old form and features, and to restore those which had been destroyed. The brick gables which had supplanted the earlier half-timber ones have been removed, and the timber and stucco, together with the oriel windows, corbels, barge-boards, &c., have been reinstated. In other parts, the timber and stucco were concealed by a thin facing of brickwork. These also have been altered back to the original state. The lattice windows, the ironwork, the lead eavesgutters and pipes, and the beautiful pipe-heads of ornamental leadwork, bearing a shield with a pelican (the Lechmere crest) thereon, together with all mouldings, carvings, corbels, pendants, and finials, have been very carefully restored. The above description is taken from an account published by Mr. Lewis Sheppard, the architect of the restorations, and our views are from photographs. We shall give some others shortly from the same series.

XII, XIII, AND XIV, LONG ACRE, W.C.

THESE premises have just been erected for Mr. Edward Stanford from the design of Messrs. Read and MacDonald. The front is executed in Portland stone, the brickwork in the upper part being of salt-glazed bricks. The carving was modelled and executed by Messrs. Walter Smith and Wheaton. The contractors were Messrs. Holloway Brothers, of Belvedere-road, S.E.

XVI, TO XXVI, MOUNT STREET, W.

THESE premises, finished a year or two ago from the designs of Messrs. Read and MacDonald, contain shops on the ground floor with residential upper parts above. The fronts are of Portland stone with small red bricks. Messrs. Holloway Brothers, of Belvedere-road, S.E., were the contractors.





MESSRS. STANFORD'S PREMISES, LONG ACRE, W.C.





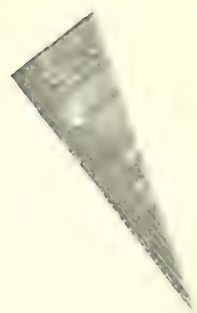
THE HALL.
SEVERN END, WORCESTERSHIRE.
RESTORED BY MESSRS. LEWIS SHEPPARD & SON, ARCHITECTS.



THE ENTRANCE FRONT.



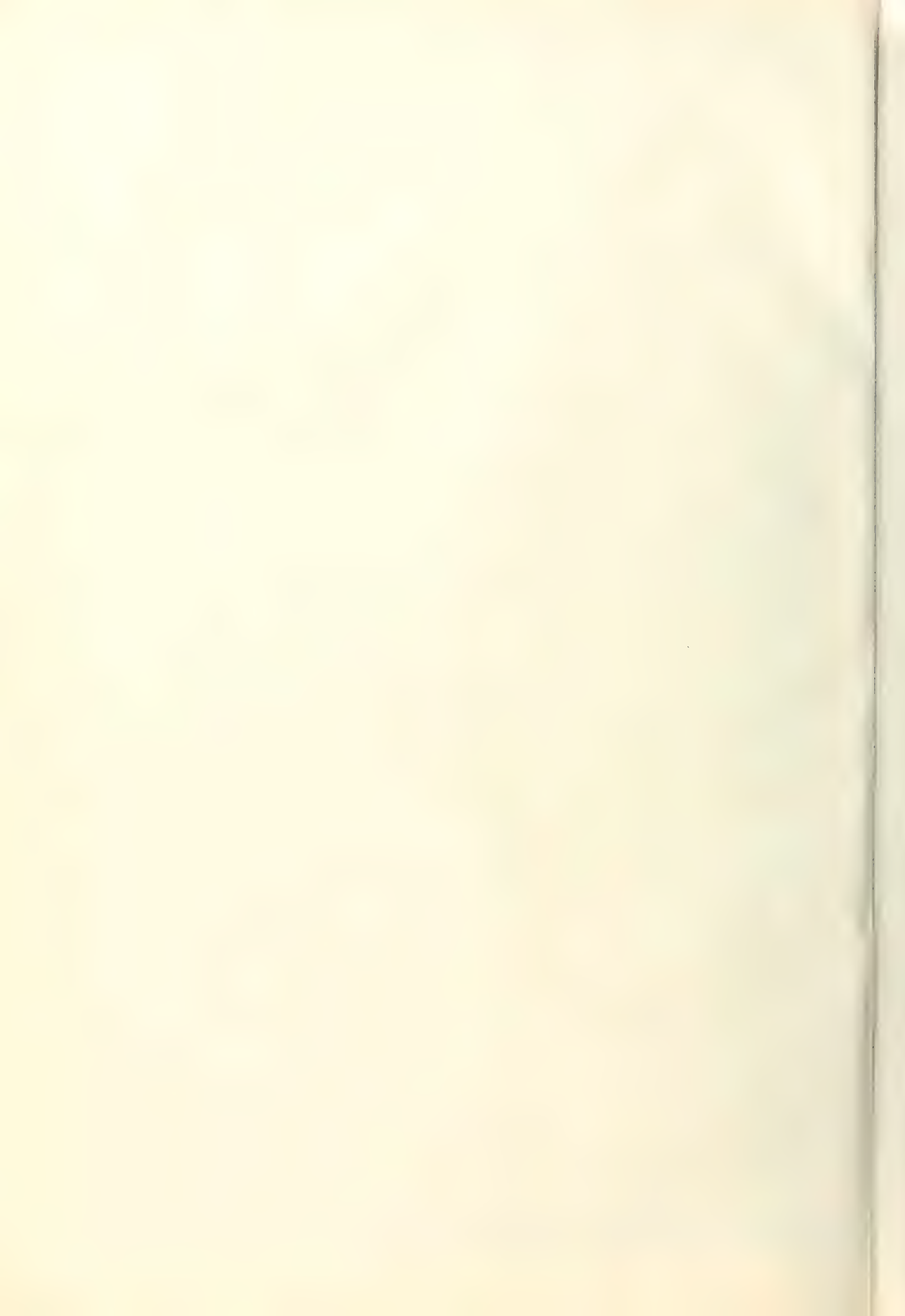


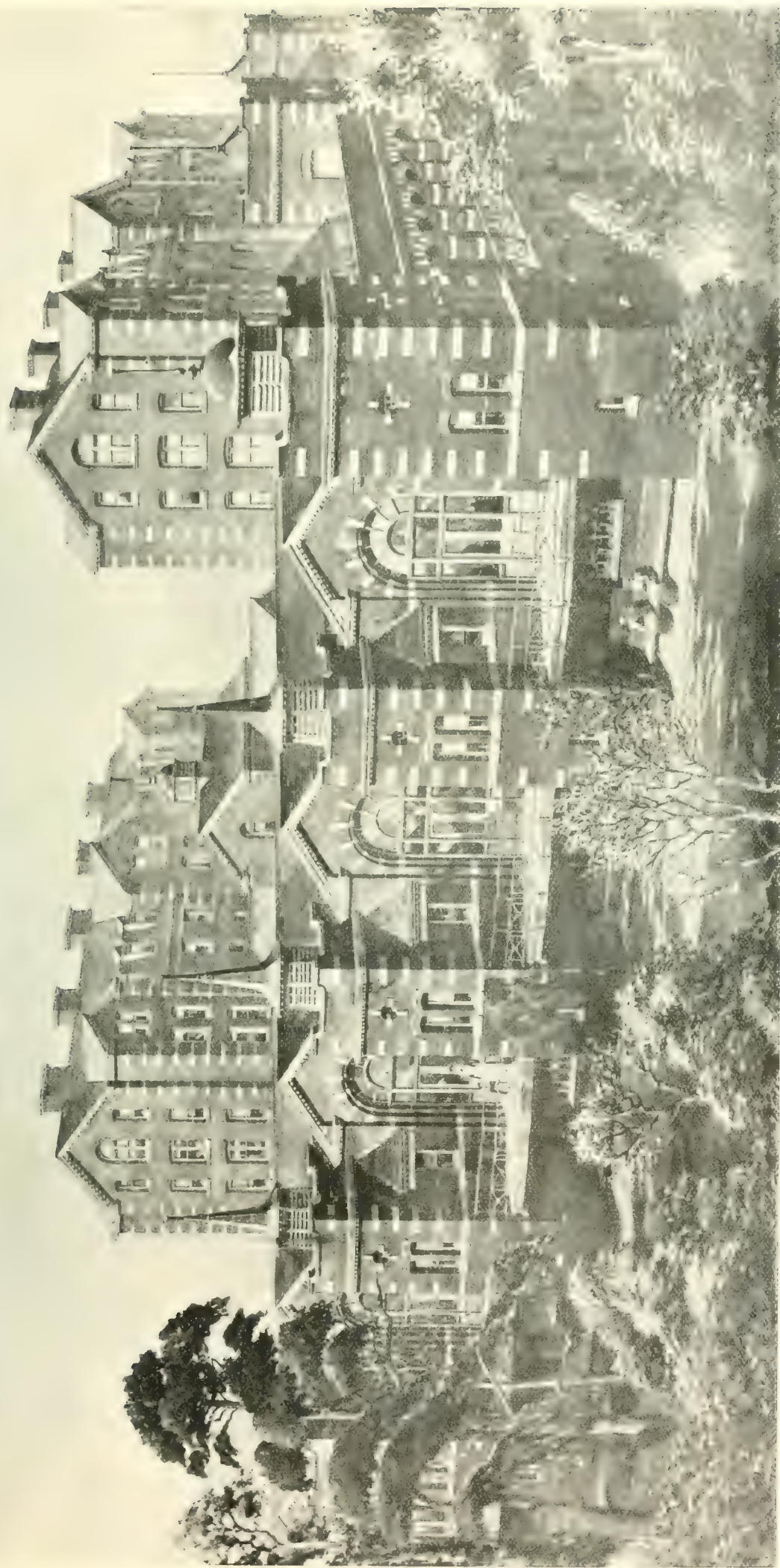




PANEL IN BANQUET HALL, GLASGOW
BY ALEX. ROBERTSON







ROYAL VICTORIA HOSPITAL, BELFAST.
MESSRS. W. HENMAN AND T. COOPER, ARCHITECTS.



THE GARDEN FRONT.



THE DUKE'S BEDROOM.

London: Ash & Co., Ltd.

75, MAY 31, 1901.



BUSINESS PREMISES, MOUNT STREET, W.

London Scottish Engraving Co., Ltd.



SEVERN END, WORCESTERSHIRE.

WATER SUPPLY AND SANITARY MATTERS.

water supply for the city. Mr. Bain, the convener of the Water Committee, stated that Mr. Charles and the construction might occupy ten years.

at a cost of £1,750, from the designs of Mr. F. T. years by 18,000, and St. Stephen's will be the fourth new church erected since 1891. The contract has been secured by Messrs. J. Harley and Sons, of Smethwick.

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The appointment of a board to superintend the preparation of plans for a new building at Washington, D.C., for the United States Department of Agriculture, consisting of the secretary of Agriculture, the supervising architect of the Treasury Department, Mr. James Knox Taylor, of Philadelphia, and Mr. Rush Marshall, of Washington, has been approved. The board will select ten architects to be invited to submit plans by October next.

A memorial-stone has just been placed on the grave of John Ruskin in Coniston Churchyard in the form of a cross of the type lately revived from the model of the age before the Norman Conquest, cut from hard grey-green stone of the neighbouring Tilberthwaite Quarries, and, with its base, is a little over 9ft. high. The only inscription is the name and dates of birth and death. The remainder of the stone is carved with symbolical representations of Ruskin's principal works, from the designs of Mr. W. G. Collingwood, of Coniston.

The Sèvres porcelain vase presented by the French Government to the trustees of the British Museum, in return for their gift to the Bibliothèque Nationale in Paris of a large number of duplicate pamphlets relating to the French Revolution, has arrived at the Museum, and has been placed in charge of Mr. C. H. Read, the Keeper of the British and Mediaeval Antiquities and Ethnography. It is decorated with four paintings of great technical excellence by M. Taxile Doat, symbolising the city of Paris, and representing Notre Dame, the Arc de Triomphe, the Hôtel de Ville, and the Louvre.

The spire of the parish church of Benefield, near Peterborough, which was recently struck by lightning, is being restored and partially rebuilt. The work, which will cost £600, is being carried out by Messrs. Thompson and Co., of Peterborough.

Works of sewerage are in active progress at Northwich, for the urban district council. Messrs. Bancroft and Son are the engineers, and Messrs. Dale and Appletton the contractors.

The amount of cement in concrete is limited to 1 or 2 per cent. in excess of the measured voids, in the new specifications for the New York State canals. In response to an inquiry as to the extent to which the contractors keep within these narrow limits, Mr. William Pierson Judson, Deputy State Engineer, states that "the margin of 1 to 2 per cent. in matrix in excess of the measured voids of the total mass of the loose aggregate is, as it was intended to be, a maximum amount of mortar, and the result usually shows a slight excess of matrix after filling the voids."

Since the Light Railways Act was passed in 1893, the commissioners have dealt with 309 applications from all parts of the country. In the aggregate these schemes were designed to cover a distance of rather more than 3,000 miles, and were estimated to cost 20½ millions. Of the entire number 167 have received official sanction, 70 were rejected, and 41 withdrawn, while others have still to be dealt with.

miles, and will necessitate an expenditure for land

The foundation-stone of St. Gabriel's Church, at Northwich, was laid on Friday, May 25, at 10.30 a.m., by the Rev. Canon

LEGAL INTELLIGENCE.

The Westminster County Court, at the Clerkwell County-court, an award was made in the case of Mitchell v. Hennings, heard before Deputy Judge Sinclair on the 6th inst. The applicant was employed by the respondent, a builder, on premises which constituted a factory within the Act of 1897. On April 30 last, while engaged in planing wood, the applicant's right hand was injured, four fingers being cut off at the knuckles. A notice in the terms of the Employers' Liability Act was served, and correspondence ensued between the applicant's solicitor and the respondent and an insurance company in which a claim for compensation was made, but no direct claim for compensation under the new Act was mentioned. A weekly payment of 10s., being half the applicant's wages, was made to him by the insurance company, and the respondent added 2s. 6d. to this. These payments continued for ten months. On two occasions within six months of the accident a lump sum in satisfaction was offered by the insurance company. For the applicant it was contended that a sufficient claim had been made under the Compensation Act; and that even if this were not so the respondent was estopped from relying upon the omission by his conduct and that of his agents ("Wright v. Bagnall," 1900). The respondent denied liability on the following grounds: (1) That the only claim made was a general claim for damages ("Powell v. Main Colliery Company," 1900). (2) That the facts did not amount to a waiver by respondent of the necessary claim, and there was no estoppel ("Rendall v. Hill's Dry Docks Company, Ltd.," 1900). The Deputy Judge made an award in favour of the applicant of 10s. weekly upon the ground that, although no specific claim under the Act had been made within six months of the accident, the action of the respondent and his agents throughout the negotiations amounted to an admission of liability under the Act, and that the amount of the award was not to be affected by the fact that since the accident the respondent had offered, and the applicant had refused, employment at the former rate of wages.

CHIPS.

The new science buildings and laboratory attached to Queen Elizabeth's Grammar School, Cranbrook, which have just been completed by Messrs. Marshall and Son, Cranbrook, will be opened on Monday next by the Right Hon. J. G. Talbot, M.P. for Oxford University.

An interesting ceremony was performed at Portsmouth last week, when Viscount Goschen unveiled a granite obelisk erected in Victoria Park to the memory of the officers and men of H.M.S. *Porpoise* who lost their lives in South Africa. The obelisk is of reddish-brown Peterhead granite, and its base block, resting on a granite foundation, weighs three tons. The needle is 12ft. high, and rises to 24ft. above the ground level. The entire weight of the monument is 12 tons. Four semi-circular copings surrounding the moulded panels of the base block bear the naval crown, the emblems of the Royal Marine Artillery and Light Infantry, and the naval officers' crest.

The National Society for Employment of Epileptics some time ago made an appeal for funds to enable them to provide, at their colony at Chalfont St. Peter, a home specially adapted for convalescent and other similar cases. An anonymous donor immediately responded to the appeal, and undertook to defray the entire cost (about £3,300) of erecting at the colony a convalescent home for 24 male patients. The building has already been begun, and will be completed by the end of the year. The cost of furnishing the home—estimated at £500—has not yet been provided.

At its last meeting the London County Council authorised the Highways Committee to prepare specifications, and to invite tenders for the reconstruction for electrical traction, of those portions of the London County Council tramways between (a) the junction of Kennington-road with Westminster Bridge-road and St. George's-circus; (b) the Elephant and Castle, along New and Old Kent-roads, New Cross-road, Greenwich-road, to the terminus at Trafalgar-road, Greenwich; and (c) the Elephant and Castle, via Newington-causeway to St. George's Church, Borough, and thence via Dover-street to the junction of the New and Old Kent-roads; and that the parties tendering be allowed to submit their own designs of the yoke and insulator which they propose to supply.

Mr. A. A. G. Milet, an inspector of the Local Government Board, held an inquiry at Stoke-on-Trent, on Friday, into an application by the town council for sanction to borrow £1,233 for works of sewerage; £551 for works of surface-water drainage; £1,685 for the purchase of land and buildings required in connection with the proposed installation of the electric light, erection of refuse destructor, and for an incinerator and factory in Campbell-place; and £130 for a road survey.

Sydenham Wells Park, near Upper Sydenham, which has been acquired and laid out at the joint cost of the local authority and the London County Council—£7,000 being expended on the land, and over £5,000 on converting it into a public resort—was formally opened on Monday by Mr. A. M. Torrance, chairman of the London County Council. It has been laid out from plans by Mr. J. J. Saxby, superintendent of parks, and has an area of 17½ acres.

A Celtic cross, erected to the memory of Major-General Wauchope on the ground facing Niddrie Public School, near Liberton, N.B., was unveiled on Saturday afternoon by Sir Charles Dalrymple, M.P., of Newhailes. The cross is of Corennie red granite, and has neither circled arms nor nimbus. It has been executed from designs by Mr. Thomas T. Paterson, architect, York-place, Edinburgh.

The east window erected in St. Michael's Church, Broadway, to the memory of Lieutenant R. Fordham Flower, of the Warwickshire Imperial Yeomanry, who was killed in action at Hannan's Kraal, South Africa, on August 20 last year, was unveiled by the Dean of Worcester on Sunday. The window represents the Resurrection of our Lord.

The Rother Valley Light Railway Company is giving notice of an intention to make application to the light railway commissioners for power to construct the long-promised line from Tenterden to Headcorn. Commencing by a junction with the present light railway at Tenterden, the line will pass through the parish of Biddenden and terminate at the Headcorn Station of the South Eastern main line.

A faculty was granted last week at the Norwich Consistory Court for the erection of a carved oak reredos in the parish church of Bramford, near Ipswich. It has been designed by Mr. W. D. Caroe, architect to the Ecclesiastical Commissioners.

Colonel A. C. Smith has held an inquiry at Bexhill into the application of the urban district council to borrow £6,074 for the making up of De La Warr, Fairmount, part of Dorset-road, and Elmstead-road, and of £2,239 for paving, kerbing, and channelling, and footpaths over Church-Hill, Little Common, Hastings-road, and Chantry-lane.

The contract for the erection of the new Royal Infirmary at Newcastle-on-Tyne has been let, the price being £195,000. The contractor is Mr. Samuel Warburton, of Miles Platting, near Manchester. The foundation-stone of the new building was laid last year by the King. The joint architects are Mr. H. Percy Adams, of London, and Mr. W. Lister Newcombe, of Newcastle, whose design was selected in competition by Mr. Alfred Waterhouse, R.A.

A serious fire occurred on Monday at Salisbury, destroying extensive business premises in the centre of the city, and doing some damage to St. Thomas's Church, a building of great antiquarian interest.

The whole of the sum required to secure an additional 43 acres to Brockwell Park, namely £66,800, has now been promised, the latest addition being a further contribution from the London Parochial Charities.

A Bill for the construction of a railway 14 miles long between Winchester and Southampton has been approved by a House of Commons committee on condition of the insertion of certain clauses.

The examination of the permanent way of the electrical tramway system between Cheetham Hill and Albert-square, Manchester, has been completed by Lieutenant Colonel Von Donop, on behalf of the Board of Trade. Mr. A. P. Trotter inspected the overhead equipment, and expressed himself fully satisfied.

Last week's business at the Tokenhouse-yard Mart was exceptionally heavy, property being crowded into the market in order to clear before the Whitsuntide holidays. Few large country estates were brought forward or sold, and the various country residences submitted did not meet with much demand. The principal transactions occurred in London or suburban freehold properties. Eight residences just off Clapham Common, with about a quarter of an acre of garden each, realised £11,345. The total amount of the week's sales was £270,963, which compares favourably with £102,633 for the corresponding week of last year.

Mr. R. Graham Keevil, C.E., of the Bristol Docks Engineer's staff, has been appointed by the London and South-Western Railway Company to take charge of their new works at Southampton.

In the House of Commons, on Friday, the Lord Advocate brought in a Bill to amend the law in regard to the sewerage and drainage and water supply of the burghs in Scotland. It was read a first time.

The new science schools at Bishop's Stortford, opened by the Viscountess Hampden last week, were built by Messrs. John Glasscock and Son, of Bishop's Stortford.

Our Office Table.

AN important memorandum on the site to be selected for the new Liverpool Cathedral, has been drawn up by Mr. George Bradbury, diocesan surveyor, ex-president of the Liverpool Architectural Society, and architect of the recently opened church house, in that city. He urges that the site should be a little apart, away from the noise, dirt, and bustle of the heavy traffic of the Liverpool streets, but as near the centre of the city, between north and south, as possible. If a portion of the cathedral is to be built within the next 20 years, the question of the cost of the site is, he urges, most important. If the committee have to spend £150,000 to £200,000 in purchasing buildings, then all the money at present subscribed and for the next few years would probably be expended without the laying of a single stone. As to the question of foundations, the cathedral should be built on the rock, so as to properly sustain the high towers or spires. The cost of foundations in the lower parts of the city would be something enormous. He quotes passages from Ruskin to show that architectural effect depends, more upon the excitement of the imagination by a judicious choice of site than on measurement by the eye. Of the three possible sites now under consideration by the committee—St. Luke's, Bold-street; Monument-place, London-road; and St. James's Mount, Upper Duke-street—on every ground he considers the last mentioned is the best available situation in Liverpool, affording a perfectly level plateau about 150ft. above high-water mark, with the hollow occupied by the cemetery below it.

An attempt is being made to create an ideal seaside village near Whitburn, in close proximity to Sunderland. The estate, which will be known as Seaburn, will cover 27½ acres of the Lady Browne Lands, facing a stretch of sands near Parson Rock on the coast of Durham. Instead of the ordinary straight streets, the houses will be built round squares and avenues, which will be turfed and planted with trees. The squares will be some 300ft. by 150ft., and the principal avenue will be 1,000ft. long and 100ft. wide. When completed the village will consist of 400 houses, the first batch to be erected being 120 on the section overlooking the sea. The houses will be two and a half stories high, and will contain three sitting-rooms, six bedrooms, bathroom, kitchen, &c., an arrangement allowing the occupiers to let off portions of their houses in summer to visitors, without themselves leaving. In the back streets the low walls will be surmounted by trellis work about which ivy and evergreens will climb. The projectors have left spaces on the estate for churches and schools, but licensed houses will find no place there. The houses will be designed, so far as the exterior is concerned, after the Bournemouth pattern. The latest extension of the Sunderland Electric Tramway Service has brought the cars right up to the border of the estate, and a private company is seeking powers to run cars from Shields through Cleadon and Whitburn along the sea front to join the Sunderland Corporation line. Mr. Frank Caws, F.R.I.B.A., is the architect for the estate.

The members of the Geologists' Association are spending this week in the district surrounding Bristol. The programme was opened with a visit to Wootton Bassett, where the Bristol and South Wales direct railway joins the Great Western line. The excavations carried out by the contractor for this great scheme at several points break ground of considerable geological interest. On Monday the members resumed their peregrinations at Malmesbury, and Tuesday was spent in the neighbourhood of Yate and Stoke Gifford. Wednesday was devoted to Tortworth; yesterday (Thursday) the party visited Sundry. To-day (Friday) Professor Lloyd Morgan has undertaken to point out some of the features of the Avon Gorge, and the famous cliff at Aust will also be inspected. To-morrow, the concluding day, is to be spent at Maiden Bradley. In carrying out this series of scientific excursions, the geologists have the assistance and direction of the Rev. H. Winwood, Professor Lloyd Morgan, Professor Reynolds, Mr. B. Baker, Mr. J. Scanes, and Mr. S. S. Buckman.

The annual report for the year ended Sept. 30, 1900, of the Board of Manufactures in Scotland as to the National Gallery, School of Art, Museum of Antiquities, and other buildings and establishments under their charge, has just been issued.

To the Scottish National Gallery the following works of art have been added during the year:—Portrait of Mr. Andrew Plimer, miniature painter, by A. Geddes, A.R.A.; portrait of Mr. Alexander Bonar, of Ratho, and of Mrs. Bonar, both by Sir Henry Raeburn, presented by Miss S. A. Fleming; and portrait of Mrs. Douglas Dickson, by A. Geddes, A.R.A., bequeathed by Sir Douglas MacLagan. To the Scottish National Portrait Gallery, among other works, there have been added during the year a miniature of Viscount Dundee, by an unknown artist, presented by Mr. A. Sholto Douglas; a portrait of King James I. of Scotland, by an unknown artist, and a portrait of King James V., by an unknown artist, both from the Watson collection; a portrait of Dr. Chalmers, by Kenneth McLeay, presented by Sir T. D. Gibson Carmichael; a portrait of Sir John Anstruther, pen drawing by George Dance, R.A.; and a plaster bust of Prince Charles Edward Stuart, by J. B. Lemoyne. The portrait of Alexander Pope, by Jonathan Richardson, has been deposited on permanent loan by the trustees of the National Portrait Gallery, London. During the year decorative portrait statues of Sir Henry Raeburn, James Hutton, Sir David Lindsay, Gavin Douglas, and Lord James Douglas have been placed in niches on the exterior of the National Portrait Gallery buildings. The number of objects of antiquity added to the Museum of Antiquities was 589 by donation and 397 by purchase.

In connection with the excavations which have been going on during the past three months at Inchuthill, on the estate of Delvine, belonging to Sir Alexander Muir Mackenzie, Bart., some interesting discoveries have lately been made. In addition to a camp of about 600 yards square, with the "via principalis" and several gateways well defined, there have been uncovered two ovens, the foundations and details of several dwellings, and a Roman bath. Circular in shape, the ovens are about 8ft. below the surface at the deepest part, and in each a quantity of charred wood and earth have been found. One is in much better preservation than the other. The bath is about 12ft. long, 7ft. wide, and 6ft. deep, and was cemented all round. Brick steps leading down to it are still to be seen at one of the corners, and in the bottom is a lead wastepipe, about 3in. in diameter, so situated that the bath could be completely drained by it. An elliptical stone conduit, about 2ft. high, has also been discovered. At present operations are going on in connection with one of the dwellings, in which quantities of tiles and broken pottery have been dug up. The ornamentation of the tiles generally consists of some crude lines and circles, but the pottery—fragments of wine jars and other vessels—shows more ambitious designs. Among other articles that have been unearthed are coins, a boar's jaw and tusk, part of a deer's horn, and bones of horses and other animals.

Mr. Edison is reported to have told one of the correspondents of the halfpenny papers that he has invented an improved cement. All buildings in future are to be made of this cement. An iron framework is put up, the cement poured in, the roof thrown on, and in three or four days the house is fit for habitation. Mr. Edison says the cost will be insignificant, and rents will be reduced enormously. The details are not ample; but the "cement" that "dries in three or four days" is no doubt a desideratum! No mention is made of the material the cement is supposed to stick together. Perhaps there is none!

The award in the recent arbitration respecting the amount to be paid by the urban district council of Clacton-on-Sea for compulsory acquisition of land at Great Bentley for the purposes of their new water supply amounts to £2,140. The amount of land acquired is twenty-five acres. The total amount claimed by the owners was £12,000.

The new Primitive Methodist Church in Cleveland-road, Sunderland, was formally opened on Monday. The buildings, which consist of a church and school, and are of Early Gothic style, have been built from design by Mr. W. and T. R. Milburn, of Sunderland. The cost has been £4,000.

On Friday afternoon the Earl of Haddington opened the new Victoria Bridge at Haddington. The bridge provides a fresh means of communication with the southern part of the county, and has cost about £10,000. Messrs. Belfrage and Carfrae, of Edinburgh, were the engineers, and Messrs. Somervail and Co. the contractors.

MEETINGS FOR THE ENSUING WEEK.

SATURDAY. 10.30 a.m. St. Paul's Ecclesiastical Society. Visit to the Parish Church of Littlecl, conducted by the Rev. G. H. Gishaw. Train from Liverpool-street 2.38 p.m.
MONDAY. Surveyors' Institution. Annual Meeting 3 p.m.
Society of Engineers. "Concrete Subways for Underground Pipes," by A. Taylor Allen. 7.30 p.m.
Royal Institute of British Architects. Business Meeting. 8 p.m.
WEDNESDAY. Carpenter's Hall, London Wall, E.C. Exhibition of Works in Wood. 11 a.m.

CHIPS.

A drinking-fountain, erected in memory of the late Princess Mary Adelaide, Duchess of Teck, was unveiled at Richmond on Friday by Sir J. W. Szlumper, the mayor of the borough. The fountain, which is of polished red granite, immediately adjoins the Richmond Park entrance on Richmond Hill. Attached are four bronze plaques, the principal consisting of a life-like bust of the late Duchess. The sculptor was Mr. F. J. Williamson, of Esher.

Since the recent appeal for funds by the Liverpool Cathedral Committee, numerous subscriptions have been promised, bringing the amount up to more than £116,000. Further donations continue to come in.

The members of the Burns Ninety Club and some friends assembled on Saturday afternoon in the Preston Street Cemetery, Edinburgh, to unveil a memorial cross which they have erected over the grave of Jean Lorrimer—the "Chloris" and "The lassie wi' the lint-white locks" of the poet Burns. Mr. McGlashan is the sculptor.

The Victoria Memorial Park of thirty-five acres, costing £4,000, was opened on Friday by Mr. W. H. Holland, M.P., at Rawmarsh, near Rotherham.

An addition is being made next week to the South-Eastern and Chatham Railway system by the opening of a passenger station situate at Tattenham Corner, immediately overlooking the Epsom Race-course. From London the new line runs, by way of East Croydon, through the Chipstead Valley, on which stations have already been opened at Chipstead, Kingswood, and Tadworth. Tattenham Corner Station possesses six platforms, ranging from 550ft. to 700ft. in length. In the siding refuges space is available for twenty-four long trains. It is in contemplation to erect permanent station buildings, but at present there are provided large timber structures, including booking-offices, refreshment-rooms, waiting-rooms, parcel and telegraph offices.

At Minehead, West Somersetshire, on Saturday, a new pier, which has been erected at a cost of £12,000, was inaugurated. The pier is 700ft. in length, and has been constructed from the designs of Mr. John J. Webster, C.E.

Sir W. Martin Conway was on Saturday elected to the Slade Professorship of Fine Arts at Cambridge University for the usual term of three years.

The partnership heretofore subsisting between H. Hodgson and H. E. Priestley, architects and surveyors, Bradford and Pudsey, Yorkshire, under the style of Hodgson and Priestley, has been dissolved.

The salary of Mr. McDonald, the city engineer of Glasgow, is to be raised by £100 per annum, and additions will also be made to the salaries of several members of the staff.

The first sod of Wesleyan day-schools was turned at Midsomer Norton on Friday. The building contract has been taken by Mr. William Tovey, of Midsomer Norton at £4,400.

An appeal for funds in aid of repairs in Abbey Dore Church has been issued by a committee, of which the Bishop of Hereford is chairman. The church is a unique example of a Cistercian presbytery, and forms the eastern section of the Abbey Church, founded in 1147 for the White Monks. Mr. Roland W. Paul, who has been consulted, states that the main walls are sound, but that some portions of the building are in a dangerous state, the upper part of the tower being seriously out of position. A public meeting in support of the project for restoration was held on Wednesday at the Palace, Hereford, under the presidency of the Right Rev. Dr. Perceval.

The King has appointed Mr. Thomas Hudson Beare, B.Sc., to be Regius Professor of Engineering in the University of Edinburgh, in the room of Professor George Frederick Armstrong, deceased.

The new Johnson Technical College which has been erected in South-street, Durham, is about to be publicly opened. The college is of red brick with stone dressings, is three stories in height, and has cost £4,800. The builders are Messrs. Gradon and Sons, of Durham, and the ventilation is carried out on the Boyle system.

Trade News.

WAGES MOVEMENTS.

Notwithstanding the decline in trade, which necessitates a reduction in wages, the following is shown a gain in the cash balance of £1,130, the income exceeded that of the previous year by £10,050. The income exceeded that of the previous year by £10,050.

thus leaving a gain on the year of 265, which brings the balance forward to £1,130.

On the 28th inst. last week, a meeting of the Northern Counties Federation of Builders was held in the hall of the Northern Counties Federation of Builders, in the chair. The matter of the dispute with the Tees-side joiners, whose district includes the Hartlepoons, Middlesbrough, and Stockton, was the subject of the discussion, and it was determined to approach the executive of the Amalgamated Society of Carpenters and Joiners, through the Builders' National Association, with the object of arranging a conference between the two bodies. In view of the present fall in markets, and slackness in trade, the Northern employers feel, it is stated, that an advance of wages to any branch of the building trade would be a decided put-back to building operations and speculation, and could not be justified. Although the wages paid to joiners on Tees-side is a halfpenny per hour less than the rate on Wearside, the conditions of work, the masters contend, are vastly different. On Tees-side full time is paid all the year round, thus practically bringing the wages in the Hartlepoons, Middlesbrough, and Stockton up to the Wearside rate.

CHIPS.

The annual meeting of the Devon and Exeter Architectural Society will be held at Plymouth tomorrow (Saturday) June 1.

At the Guildhall, Wrexham, on Friday, Mr. H. Percy Boulton, M.Inst.C.E., a Local Government Board Inspector, held an inquiry with reference to the application of the Wrexham Town Council to borrow £600 to make certain improvements at the borough sewage farm. It was explained that the Corporation were spending upon the alterations and improvements at the sewage farm a considerable sum in addition to the £600 it was proposed to borrow.

On Wednesday week Lady Harris laid the foundation-stone of the new church of St. Mary in Park-road, Milton-next-Sittingbourne. The church is being erected by aid of a grant of £1,700 from the Marriott bequest, and £500 more will be required to defray the cost. The architect is Mr. W. Philip Day, and Mr. Harry Garder, of Milton, is the builder. The church is to be consecrated by Christmas Day.

Mr. W. T. Douglas, C.E., who has been called in by the corporation of Lowestoft to advise as to the best methods of protecting the North and South Beaches from the inroads of the sea, has prepared a scheme, the estimated cost of which is £30,000.

The memorial-stone of the new City Chambers for Edinburgh will be laid on Saturday in next week, the 7th of June, at two o'clock, by Lord Provost Steel.

At Hadleigh, West Suffolk, on Wednesday week, the foundation-stone was laid of new National Schools in Threadneedle-street. The style will be Elizabethan, and the building, which will cover an area of 10,000 sq. ft., will accommodate 300 children. Mr. A. H. Ryan-Tenison is the architect, and Messrs. Downes and Stephenson, of Hadleigh, have taken the contract at £2,500.

An addition to the group of Convalescent homes of the Birmingham Hospital Saturday Fund, near Llandudno, was inaugurated on Tuesday in the opening of a new wing to Tyn-y-Coed, the building presented to the fund nine years ago by Miss H. M. Jones. The new wing will accommodate 30 convalescent home for men. The building will now accommodate 63 instead of 41 patients, and has been completed from designs by Mr. E. Turner, of Llandudno.

An extension to the institution which was erected by the directors at Derby in 1891 for the benefit of the Midland Railway staff has just been opened. The extension comprises a dining-hall seating 200, a smaller dining-room, a restaurant, a café, and kitchen. The extension was designed and has been carried out under the direction of the architect, Mr. C. E. B. Jones.

The large window above the Communion table of Blackford Parish Church, composed of three Gothic lights, has been filled with stained glass dedicated to the memory of George Ramsay MacGibbon, trooper, 19th Imperial Yeomanry, who died at Welverdiend, South Africa, October 16, 1900. A figure of St. Paul, with his emblematic sword, and a figure of St. John, holding the pen and book, form the designs of the two sidelights; and a figure of the risen Lord occupies the central light. The ornamental parts are in silvery grey. The artists are Messrs. A. Ballantine and Gardiner, Edinburgh.

A provisional order has been granted by the Local Government Board to York Corporation to acquire compulsorily certain property and lands necessary for the purpose of widening, opening, enlarging, or otherwise improving the streets called Coppergate, Nessgate, and Spurrigergate. Provision is made for the rehousing of the disturbed tenants.

A company has been formed for the purpose of constructing a railway from Southend to Bannham and Bawdwell-on-Sea, with stations at the various small towns en route. The River Crouch, which is about a mile wide, will be crossed by a ferry.

The urban district council of Crowland have adopted a scheme of water supply for the town prepared by Mr. G. Hodson, C.E., of Loughborough, and are advertising for tenders for boring on the selected site.

The new tower to the ancient parish church of Broughton-in-Furness, which has been erected by Lord Cross at his own expense, and the new peal of eight bells have been dedicated by the Bishop of Carlisle. The tower has been designed by Messrs. Austin and Paley, of Lancaster, and is in keeping with the Norman architecture of the church.

An application is about to be made by Sir Cuthbert Quilter, M.P., to the Light Railway Commissioners, for an order authorising the construction of a light railway 8½ miles in length, extending from a junction with the G.E.R. system at Melton near Woodbridge, through Shottisham and Holmesley, to the sea-coast at Bawdsey, at the mouth of the river Deben.

Captain Marsh has held an inquiry at Winchester as to an application for sanction to borrow £10,000 required for purchasing and laying out the 35 acres in Hyde Parish as a recreation ground, and £3,000 for museum purposes.

The Colwyn Bay Urban District Council were informed on Tuesday that the plans for the extension of the promenade from Colwyn Bay to Rhos-on-Sea had been agreed to by the Trustees of Sir George Cayley's estate, who are contributing £15,000 towards the scheme. When concluded, it will be one of the finest promenades in the Kingdom, extending from Old Colwyn to Rhos, a distance of three miles.

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	Per ton.	Per ton.
Roller-Iron Joists, Belgian	26 0 0	26 10 0
Roller-Iron Joists, English	26 0 0	26 10 0
Wrought-Iron Girder Plates	26 0 0	26 10 0
Bar-Iron, good Staffs	8 7 6	9 7 6
Do., Lowland, Flat, Round, or Square	26 0 0	26 0 0
Do., Welsh	5 15 0	5 17 6
Boiler-Plate, Iron—		
South Staffs	7 17 6	8 5 0
Best Steel-Shell	13 0 0	13 10 0
Do., Angles, 10s., 12s., 20s., per ton extra.		
Builders' Hoop-Iron, for bonding, &c., 26 1/2s.		
Builders' Hoop-Iron, galvanised, 15 1/2s. 6d. per ton.		
Galvanised Corrugated Sheet-Iron—		

	No. 18 to 20.	No. 22 to 24.
Flat, per ton.	12 5 0	12 10 0
Best quality	12 15 0	13 0 0
Flat, per ton.		
Cast-Iron Columns	29 0 0	29 10 0
Cast-Iron Stanchions	9 0 0	9 10 0
Roller-Iron Fencing Wire	10 5 0	10 10 0
Roller-Iron Fencing Wire	8 5 0	8 15 0
Cast-Iron Sash Weights	9 0 0	10 0 0
Cast-Iron Sash Weights	7 5 0	8 0 0
Cast-Iron Nails, 3in. to 6in.	12 0 0	13 0 0
Cast-Iron Nails	11 15 0	12 15 0

	Wine Nails, 10s. to 12s.	13s.	14s.	15s.	B.W.G.
10s. to 12s.	10 9 11 3	12	12 9	13 6	14 6
Cast-Iron Socket Pipes—					

3in. diameter	£6 17 6	to £7 5 0
4in. to 6in.	6 15 0	to 7 0 0
7in. to 24in. all sizes	6 15 0	to 7 0 0
Coated with composition, 2s. 6d. per ton extra; turned and bored joints, 5s. per ton extra.]		

	Per ton.
Cold Blast, Lilleshall	105s. to 110s.
Hot Blast, ditto	57s. 6d. to 62s. 6d.

	Per ton.
Wrought-Iron Tubes and Fittings—Discount off Standard	
List 1 & 2	62 1/2 p.c.

Gas-Tubes	57 1/2 ..
Water-Tubes	52 1/2 ..
Steam-Tubes	50 ..
Galvanised Gas-Tubes	45 ..
Galvanised Water-Tubes	45 ..
Galvanised Steam-Tubes	45 ..

	10cwt. casks.	5cwt. casks.
Zinc, English, London mill	£24 10 0	to £25 0 0

Do., Vieille Montagne	25 0 0	to 25 10 0
Sheet Lead, 36 in. per sq. ft. super.	11 17 6	to 15 17 6
Pig Lead, in 10wt. pigs	12 10 0	to 13 10 0
Lead Shot, in 25lb. bags	16 2 6	to 17 2 6
Copper Sheet, sheathing and rods	81 15 0	to 85 0 0
Copper, British Cake and ingot	75 5 0	to 75 15 0
Tin, Straits	122 5 0	to 124 5 0
Do., English Ingots	120 0 0	to 121 0 0
Spelter, Silesian	17 5 0	to 17 10 0

TIMBER.

	per load	£10 10 0	to	£16 5 0
Teak, Burmah				
Bangkok	10 0 0	to	15 5 0	
Quebec Pine, yellow	4 2 6	to	5 0 0	
Oak	3 15 0	to	6 10 0	
Birch	4 2 6	to	6 0 0	
Elm	5 5 0	to	6 0 0	
Ash	4 2 6	to	6 0 0	
Dantisc and Memel Oak	2 15 0	to	4 7 6	
Fir	3 5 0	to	4 10 0	
Wainscot, Riga p. log	1 17 6	to	3 2 6	
Lath, Dantisc, p.f.	4 0 0	to	5 10 0	
St. Petersburg	4 0 0	to	6 10 0	
Greenheart	7 15 0	to	8 0 0	
Box	7 0 0	to	15 0 0	
Saport, U.S.A.	0 1 3	to	0 2 0	

	per cubic foot
Mahogany, Cuba, per super foot	0 0 6

	in. thick	0 0 6	to	0 0 8
Honduras				
Mexican				
African				

Cedar, Cuba	0 0 3	to	0 0 3
Honduras	0 0 3	to	0 0 3

Satinwood	0 0 10	to	0 1 5
Walnut, Italian	0 0 3	to	0 0 7

American logs	0 2 3	to	0 4 6
Do., per St. Petersburg Standard, 120-121 ft. by 12 in.			

	by 12 in.	£25 0 0	to	£30 0 0
Quebec Pine, 1st				

2nd	17 10 0	to	21 0 0
3rd	12 0 0	to	14 0 0

Canada Spruce, 1st	11 5 0	to	14 0 0
2nd and 3rd	8 10 0	to	10 5 0

New Brunswick	8 15 0	to	11 10 0
Riga	9 10 0	to	10 5 0

St. Petersburg	11 0 0	to	19 0 0
Swedish	12 5 0	to	21 10 0

Finland	11 15 0	to	13 5 0
White Sea	13 0 0	to	23 0 0

Buttens, all sorts	5 0 0	to	12 10 0
Flooring Boards, per square of 12 in.			

1st prepared	£0 12 0	to	£3 18 0
2nd ditto	0 11 0	to	0 14 0

Other qualities	0 6 0	to	0 13 0
Staves, per standard M. —			

U.S. ditto	£37 10 0	to	£45 0 0
Memel, et. p.p.	220 0 0	to	230 0 0

Memel, black	130 0 0	to	230 0 0
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OILS.

	per tun	£27 10 0	to	£28 0 0
Linsed				

Rapsed, English pale	29 10 0	to	29 15 0
Do., brown	27 15 0	to	28 10 0
Cottonseed, refined	21 10 0	to	22 0 0

Olive, Spanish	33 0 0	to	43 0 0
Sed, pale	26 0 0	to	26 10 0
Coconut, Cochin	29 15 0	to	30 0 0

LIST OF TENDERS OPEN.

Buxton. Stop time for Thermal Water Pump, cost £1,000	£20, £10, £0	W. H. Gowers, Town Surveyor, Town Hall, Buxton	Jan. 8
Ennis. Co. Clere. Additions, &c., to District Lunatic Asylum	£100	J. J. Munnagh, Clerk, Ennis District Lunatic Asylum, Co. Clere	" 24
Ennis. Co. Clere. Additions, &c., to District Lunatic Asylum	£20, £10	W. J. Mann, Clerk, Ennis District Lunatic Asylum	" 29
Trillick. Infirmary Hospital	£100, £10, £0	John Parker, City Engineer, Belfast	" 31
Haverhill. Municipal Buildings	£100, £10, £20, £10, £0	The Town Clerk, Town Hall, Manchester	Feb. 1
Manchester. Fire and Police Station, No. 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	£100, £20, £100	G. Cosgrove, Suburban, New Southgate, N.	
New Southgate, N. Double-fronted House, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	£1,000	The Borough Engineer, Town Hall, Salford	
Salford. Machinery or Appliances for Sewer Works	£10	John Rickesley, Borough Road, Huddersley	
Huddersley. Constitutional Club Premises	£10		

LIST OF TENDERS OPEN.

J. Whitworth

H. E. Stoltz, F.R.I.B.A., 19, Mosley street, Manchester
Geo. Handley Johnson, Architect, 38, High-street, Rotherham
Arthur A. Gibson, Architect, 5, Prospect-avenue, Harrogate
Wm. Griffiths, F.S.I., Architect, Falcon Chambers, Llanelly
E. A. Johnson, F.R.I.B.A., Architect, Abney-view
Gosson, Jones, Perkins, & Bulmer, Architects, 27, Cookridge-st., Leeds
Wm. Griffiths, F.S.I., Architect, Falcon Chambers, Llanelly
Hickton and Farmer, Architects, Walsall
J. H. Cooper, Architect, Lindum-road, Lincoln
Wm. Griffiths, F.S.I., Architect, Falcon Chambers, Llanelly
Dymock Pratt, Architect, Long-row, Nottingham
John Lund, Borough Surveyor, Town Hall, Bedford
Wm. Griffiths, F.S.I., Architect, Falcon Chambers, Llanelly
J. B. Broadbent, F.R.I.B.A., 15, Cooper-street, Manchester
H. J. Price, F.R.I.B.A., Architect, 24, Low-pavement, Nottingham
E. A. Johnson, F.R.I.B.A., Mortley
Wm. Griffiths, F.S.I., Architect, Falcon Chambers, Llanelly
Silvanus Trevel, F.R.I.B.A., Truro
J. Jameson Green, Architect, 19, South John-street, Liverpool
J. P. Jones, Richards, and Budgen, 18, St. Mary-street, Cardiff
John Shewell Corder, Surveyor, Wimbourne House, Ipswich
T. Taylor Scott, F.R.I.B.A., 43, Lowther-street, Carlisle
Mark E. Kirby, Architect, Huby, Leeds
W. H. Wallis, Architect, Queen-street, Burslem
R. Beaman and Co., Clayton West, near Huddersfield
H. E. and A. Bown, Architects, Harrogate

ENGINE

Spencer Hartly, M.C.E.I., City Engineer, City Hall, Dublin
J. M. McElroy, General Manager, 55, Piccadilly, Manchester
The City Electrical Engineer, Wakefield
W. H. Tittensor, City Electrical Engineer, City Chambers, Dundee
Robert Hammond, M.I.C.E., 64, Victoria-street, S.W.
Lacey, Clirehugh, and Sillar, Engs., 2, Queen Anne's-gate, S.W.
Lacey, Clirehugh, and Sillar, Engs., 2, Queen Anne's-gate, S.W.
W. A. Chamen, Engineer, 75, Waterloo-street, Glasgow
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ARCHITECTURAL LANDSCAPE.

THE practice of architecture has been so largely confined to the design, construction, and erection of single and isolated buildings, that the profession have had little opportunity of studying the important art of arrangement and massing so essential in the planning of streets and squares of our great towns. Except in the case of a very few private building estates that do not fall into the hands of speculative builders, the architect has seldom an opportunity afforded him of exhibiting his skill as a designer of groups of buildings or the planner of streets. Formerly there were more opportunities. During the reign of George II. the attractions of Bath encouraged the laying-out of that new Classic town from the designs of Wood, and to his taste the designs of Queen-square, the Parade, and the Crescent in that city are due. John Nash designed Regent-street and the Quadrant; Kemp built a large part of the eastern end of Brighton; and then we have the laying out and building of Belgravia by the late Thomas Cubitt, George Basevi, Hardwick, Kendall, and others. Cubitt, in conjunction with the Duke of Bedford, the Marquis of Westminster, Mr. Lowndes, and others, built Belgrave-square, Lowndes-square, Chesham-place, and Eaton-square. But these chances are few and far between, and the plan of engaging architects for isolated buildings in a piecemeal sort of way is now the rule. To this fact we must attribute the want of unity and the fragmentary character of our town building and arrangements. There was at least coherence and unity about the old Quadrant in Regent-street; but the large and unsatisfactory semicircle that has taken its place is an example of piecemeal arrangements. The accidental made the picturesqueness of the ancient city; for the modern town we require order and regularity.

In the half-Medieval city and modern town of which numerous examples may be found in England and the Continent—such cities as York, Canterbury, Winchester, Salisbury, Southampton—where the ancient walls have been partially demolished and their moats filled up, and where municipal extensions have been going on in one or more direction, there may still be seen pleasing groupings of ancient buildings with trees and market-places, in which the cathedral or castle or other feature predominates, and the scheme of unity has not entirely vanished from sight. In some of these places, as in the latter town, municipal progress and extension have gone almost to the extent of obliterating this ancient aspect and tradition. In the greater towns, as in London, what in ancient times was the heart of the city has now become a solitary feature connected by thoroughfares that extend in all directions. The modern city has grown too large to be picturesque, as one American writer observes; its avenues are too long and spacious, and its spaces too large for the fundamental elements of pleasing grouping to exist. What in the Medieval city and market-town became the central object, the centre of commerce, is now distributed in numerous directions. Instead of a central cathedral with its tower standing high above the surrounding houses, there may now be seen in most large towns scores of churches and steeples of varying height and importance vying with one another, instead of being subordinate to the cathedral. London from any of the bridges presents us with a remarkable instance of this scattered and disunited appearance. If we except the dome of

St. Paul's from the view, the hundreds of towers and steeples exhibit an extensive and development that is remarkable. The features that unite and bring together the disconnected parts are St. Paul's and the noble river. What it would be without the Thames we shudder to think. The river, by dividing the Metropolis into two halves, also serves to unite the parts into a whole.

In considering the architectural composition and planning of our cities, there are two main classes of effect to consider—the Picturesque and the Formal, and it is under one or other of these heads we may place all our great cities. The ancient English cities we have mentioned come under the first of these descriptions, the boulevards of Paris and Brussels conform to the second. But in both, grouping is an important element upon which the effect of architectural landscape largely depends. In the "gridiron plans," as they have been called, of Philadelphia and Chicago, in which the streets are numbered and lettered, grouping is absent; all the streets are alike, there is no feature to emphasise them, or "pull them together." In a paper by Mr. C. Howard Walker, read at the annual convention of the American Institute of Architects, on the "Grouping of Public Buildings," the author affirms the fact that buildings gain in effect by being grouped, and that isolated buildings of whatever merit are insignificant in comparison with massed structures, and from this principle, he asserts, it is "waste of opportunity to erect monumental buildings so far apart from each other that they cannot be seen together." The author, speaking of the modern city, says: "Accident must give place to intention, or the general effect of the city will be haphazard, incongruous, and incomplete," and he shows that the impression of incompleteness is characteristic of American cities, because they have no initial scheme in the plan. In Washington, a city of better type than the others we have named, there is individual character; the plan is based upon centres of interest not too far apart to be seen together. The vistas terminate with monuments, sculptured or architectural, as in Paris. It is also true that nothing looks more ignominious than "a broad avenue leading to nothing, or fading away into the frayed skirts of a city." Another mistake is the general impression that a long, broad, straight avenue of great length is the ideal to be aimed at. It is a popular notion to make a wide straight street from one point to another without any object or destination. What can be more monotonous and wearisome than a straight uninterrupted street apparently endless? Mr. Howard Walker says very truly, "There can be no greater blunder in planning. All scale is lost by too long a perspective, and unless avenues are viewed from an eminence, or are terminated by an important mass of buildings raised high in the air, it is safe to assume that half a mile is quite long enough for any uninterrupted vista." One of the fundamental principles of architectural planning is, he points out, that of an axis upon which are strung both the voids and solids of the masses of building, and a great avenue as an axial line should lead to features at the ends. It is important, the same writer says, that the chief buildings should not be upon the sides, but upon the axes, of the great avenues; indeed, in some cases the axial avenue has been constructed by the demolition of intermediate buildings between those that remain. Thus the two churches in the Strand supply an illustration; these will be left on the axial line when the clearances on the north side are made. In the City of Washington centres of attraction exist on the axes of avenues. The danger is said to be that the sides of the existing or proposed avenues are considered adequate sites for new Government build-

ings, while, in fact, these buildings should be placed upon the axes, and the whole amount to but a repetition of the error in London as an excellent object-lesson. The Brandenburg Gate, an imitation of the Propylæa, is thrown right across its axis at one end, and disfigures it. We quite agree that the ends and approaches of bridges admit of monumental treatment, as a bridge ought to be considered an integral part of the avenue which leads over or to it. The old bridge at Prague is cited as an effective treatment, though unsymmetrical. The ends of bridges may be made to open into squares or spaces.

These and other comments may be usefully borne in view in our street transformations. The American critic describes our river embankment and bridges as the chief monumental feature in London, and the parks its great secondary feature; no fine vistas except Waterloo-place and the Duke of York's Column, and, he might have added, no grand place except Trafalgar-square. We must look for something more impressive and monumental when the Victoria Memorial is realised. If we cannot now expect unity and grandeur of planning in our great towns, we can at least make centres of interest, use every means to improve our streets, our river embankments, our bridge approaches; to place our new or leave our old public and monumental buildings on sites that will become centres of interest in our avenues, and try to produce an effect of *ensemble* if we cannot vie with Paris, Berlin, Vienna, or Buda-Pesth. We have nothing to compare with the vista of the Champs Elysées, which terminates in the Arc de Triomphe at one end and at the Louvre at the other end, as one grand avenue; but we possess in the main artery of the Strand and Fleet-street, or of Holborn and Oxford-street, with their cross thoroughfares, points from which radial streets could be made as those which have transformed Paris at the Avenue de l'Opera. We have in the Strand and Fleet-street vistas of undoubted attractiveness. The steeples of St. Mary's and St. Clement Danes, and the clock-tower of the Courts of Justice, terminate views from points as far west as the Hotel Cecil, and east as Chancery-lane, and below Fetter-lane the dome of St. Paul's forms a grand ending to the vista up Fleet-street—and the two first-named steeples are axial. How can we improve these streets?

The rearrangement and grouping of our new streets is one important aspect of architectural landscape. Of course, in the present chaotic condition of our towns, the fortuitous arrangement of houses is almost a matter of necessity, though it is now time that our municipal authorities should exercise some authority in deciding on well studied plans of new streets, and in enforcing certain rules as to the design of frontages, and especially the corners of new blocks, so that a prodigiously high building of abrupt termination should not disfigure a corner and become a lasting eyesore, and that some regard for the kind of elevation and skyline should be observed. What can be a greater eyesore than the lofty and crude brick building erected for an ophthalmic hospital on the south side of St. George's-circus, or the huge premises and warehouses that jostle up against some of our finest buildings in the City, or that disfigure the skylines of Leicester-square, Piccadilly, and Oxford-street? Such a condition of things that now render such eyesores possible ought not to exist, and would not have existed if the principle of treating London as a whole, and of selecting street improvements, calculated to provide relief to the main thoroughfares, had been adopted years ago. No power had been exercised in London as in other Continental cities, for controlling architectural features. The statutory provisions in the Acts to control general lines of frontage, and the height of buildings, do not touch the subject of outline and archi-

the Council has, we think, been somewhat arbitrary in its decision. It is a question of the necessity, but it does not touch the question. Something more is required than the enforcement of the Building Act. If in the ordinary conditions of letting, it should be stipulated that the Council would have to approve of the elevation in regard to its plan, profile, or skyline, something more direct and to the point would be accomplished. The disfigurements we have named, and the

that have seriously impaired the outline of Somerset House, as seen from the bridges, would have been avoided if the committee of the Council entrusted with street improvements should be able to invite the profession to design new frontages and elevations, as they did in the Holborn-to-Strand scheme, limiting the competitors only to such conditions of plan that were of absolute necessity. What is most needed in these cases to secure agreeable grouping, is that general sketches only should be submitted, showing the main features of old buildings that remained in connection with the new buildings, so that the skylines and grouping of the whole should be made to form a pleasing *ensemble*. Thus, in the Strand scheme, the architect would take into his view the effect of Somerset House, St. Mary-le-Strand, and St. Clement's in combination with the new streets to the north, thus preserving the old and picturesque features in the new scheme; but this was not done by any one author in the late competition. In quite new sites a general scheme of this kind would provide for the principal features in the elevations of the buildings fronting the street, such as domical centres or pavilion-roofed corners or blocks, so that dignity and architectural unity might be preserved. Had such a sketch scheme been made for, let us say, Charing Cross-road and Shaftesbury-avenue or Northumberland-avenue, the fortuitous arrangement, or rather jumble, of buildings of all kinds and heights, would have been avoided. But we do not speak of accomplished facts except as a warning for the future. There are now several opportunities for the exercise of some control. Large sites in the Strand and Fleet-street are being cleared, and there are old landmarks in the shape of buildings like Drury Lane Theatre, the churches we have named, and many old buildings that ought to be made features in the rearrangement. Will the main corner and centre positions in the new blocks be reserved for public buildings, or let to those who will erect buildings that shall agree with the views of a committee of taste the Council may appoint? Or will these sites be covered in the usual haphazard fashion, allowing every building-owner to erect what he likes, and to shock the taste of every person, every time he passes through our main thoroughfares? It would surely be reasonable to expect that every individual who purchases or leases a site in a main street, would conform to a general rule, and that it would not be infringing on the private rights of owners to require they should in their new buildings agree to adopt the general design of the street, or agree not to adopt any feature that would be at variance with the design as a whole. Indeed, the plots of a new street or avenue could be let with these conditions of design attached. The committee appointed for such a purpose ought to be assisted by the opinions of a few leading architects.

The planning of new streets in London has been conducted on the *laissez faire* principle. Easy means of communication between two or more districts have been adopted sometimes without sufficient reason. The public get accustomed to an old route, and will not

be easily coaxed into a new one, especially if the new way is not quite so short as the old route. A more important consideration is the choice of a route that, while being easy and short, is yet selected for its preservation of old buildings and architectural character. The question of cost and utility is, of course, important; but when these considerations are chosen to the sacrifice of appearance, of light and agreeableness, the public will prefer some other route. For example, unless the new street is attractive, or can be made so by the planting of trees, and does not disturb the trade of the locality, it will not be used. A new street cut through a crowded neighbourhood simply because it is direct and the cost not excessive might displace a number of people who earned a living at a particular trade and drive them to another district. The effect would be ruinous on the working classes who were dependent on the trade, who, as a rule, when displaced by clearances, seldom return to occupy new buildings erected for them, but go to swell the overcrowded parts of the adjoining districts. There can be little doubt that many of the new streets made through dense parts of London have had this effect. The widening of a street on one side by displacing a number of people may have a like result. Yet public improvements would be stopped altogether if this consideration prevailed. The problem of rehousing the displaced is a distinct and difficult question, to which we do not now refer.

The statutory powers conferred by the Metropolis Management and Amendment Acts and the London Building Act, as under clause 23, have been framed on strictly commercial and utilitarian grounds. The provisions of the Lands Clauses Consolidation Act can be introduced into special improvement Act, and under them no owner of buildings is required to sell a part only of his premises, if willing to sell the whole; the effect of which has entailed extra cost in the purchase of more ground than in some cases is necessary. What is required is a simple and inexpensive process to make improvements, such as that of the Corporation of Glasgow; but legislation is of little use, unless it is directed by a well-devised plan in which certain principles of arrangement are adopted; and avenues of trees, sculpture, and other accessories in the form of balustrade steps form a prominent plan. By placing our future public buildings in well-selected centres or spaces, by connecting existing buildings by arcades or colonnades, or by a formal plan of roads and paths adorned by trees, something may be done to relieve the present disconnected and chaotic appearance of our towns. A comprehensive plan of treatment is absolutely necessary if we are to make our street improvements effective.

ARCHITECTS' REGISTRATION AND ITS OPPONENTS.

THOUGH in a dwindling minority, the assailants of the Architects' Registration movement are still in evidence, and are never tired of repeating old and fictitious objections to the measure, including the well-worn argument that registration will not insure the inclusion of the artist, and that it is inimical to the fine-art view of the profession. But what other kind of test is not equally open to the objection? Will it be asserted that the artistically disposed student will be better studied under any examination test that it is possible to be made? Registration will do all that examination can be supposed to do—namely, record the fact that the young practitioner has the minimum of knowledge and attainments, and is capable of practising as an architect, and protecting the interest of his client and the public. It will not

touch art. It will neither exclude nor include the born artist. Will the measure shut out those with art capabilities? is a question that seems to concern a great many of the younger men in the profession. There may be a few to whom a test in any form is objectionable, and who will not submit themselves to any examination; but this will not be a bar to the really competent student who has a true artistic perception, and who desires to become an architect. Of course, there are many young men who enlist in the profession who have no vocation for it, who shrink from the hardships and discipline it entails, the drudgery of office work in its various manifestations, and of whom it may be said that the profession would not suffer from their loss. That a few artistically-minded men will not readily submit themselves to any test, from the idea that an examination in construction and sanitary matters will be raised to more importance than it deserves in the eyes of the public, may be likely; but we do not think this deterring influence will prevail.

Amongst those who find fault with the Bill are some champions of art and progress. A paper on the subject was read the other day before the Birmingham Architectural Association by Mr. Bulkeley Creswell, who gave some of the reasons which have been advanced. That the Institute could not tolerate a measure that did not emanate from their own body was almost a foregone conclusion. What, in short, was the argument put forward did not amount to much—viz., that the Bill would enable an incompetent architect to enjoy the privileges of registration, and would not preclude anyone from practising as long as he called himself by some other title, such as "builder-designer" or "agent." The point is whether the Bill would admit more incompetent architects than are in existence and practice to-day. If it did, there might be some objection; but no one could affirm any such thing. Registration would at once raise the level of attainment in the profession to a standard far higher than it is at present. As for the latter part of the statement, that the measure would not preclude any from practising as an architect so long as he assumed some other title, it is a little too far-fetched. By no other name would the public engage an architect. We are sure such a statement has not been taken seriously by the profession. The author, indeed, sums up this opinion of the Institute. As he says, "Not a word or a sign appear which suggest that this representative body, immaculated by its Royal charter, has any ambitions of architecture apart from the possibilities it holds out to the practitioner to grow fat in professional prosperity." There is certainly an acknowledgment implied in the Institute's objection that architects have failed to impress the public with the merits and good taste of their designs, and their ability over that of the surveyor or builder. But leaving this objection on one side, others have been advanced. The author of the paper thinks that Registration will restrict freedom of thought and sincerity of expression, and that the Bill would be disastrous to architecture considered as a profession only, to say nothing of the evil consequences it would have upon architecture in its highest sense as a fine art, and as one of the most elegant mediums for the expression and popular cultivation of taste. We do not see that a Bill which does not touch art in any way could have disastrous consequences to art in its highest sense, or at least could interfere with expression of taste. There are quite as many drawbacks to artistic expression now as there will be when registration is adopted; there are as many men who practise quite ignorant of art, and whose only success in the profession has been due to good fortune and perseverance. No registration will ever level the artistic capabilities of the individuals. Those who want

buildings designed in good or refined taste will go to the men who alone can give it to them, and will be guaranteed in one way they are not now; that they will obtain sound and sanitary construction. We cannot, therefore, see the force of the contention that the personal importance of members of the profession is the chief aim of the measure, or that a registered architect will consider that he is more important as an individual member than he was before; rather, we should say, the fact of registration will reduce all to a level of competency in certain matters, while it will leave unaltered the personality due to art ability and skill in design. It is asserted that the attraction which has made registration popular is no more than the attractiveness of a swagger-bellied professional prosperity," in fact the ideal of the five-per-center. Against the idea that registration would secure the confidence of the public, the unworthy motive is again trotted out, that the special plea is the "professional paunch and frock-coat," a very absurd notion. The public look to the professional architect to give them well-built and sanitary houses, and registration would aid the profession to deepen this confidence. The artistic functions are on a different footing. Those who think the "registered" practitioner, because registered, will produce the ablest artistic design, will, of course, soon find out their mistake. In these matters, of course, the confidence or applause of the public is not worth anything at all, and we are ready to endorse the remark that, in so far as the confidence and approval of the public are obtained, "it is a proven token of shallowness of thought and vulgarity." Public confidence in a well-built and equipped house is reposed entirely in the architect; the public do not pretend to know anything about construction or the science of hygiene in building; but they naturally look to the architect, and they desire some guarantee of his attainments. What they approve or applaud in design is another matter. Here everyone thinks he can judge for himself, though he is grievously mistaken. It is only the "clap-trap" professional or charlatan who cares one iota about public approval in such matters; and we therefore agree that it is humiliating to the aim of a true artist to find himself the "victim of the applause of the public." But this is what no one thinks of obtaining by registration, which is for a totally different object.

With the trend and value of the remarks on examinations we find less fault. The votaries of registration do not, as supposed, imagine that examination will secure the quality of art; nor do they look so much as their enemies think on their being able to exact the full 5 per cent. Culture and taste and ability to think cannot be secured or tested by examination, and nobody ever thought they could. We are quite ready to admit that the qualities which examination deals with are powers of memory and retention of facts; and the whole tendency of modern education is to cultivate the memory at the expense of the process of thinking, and we generally find that the most retentive memory is often accompanied by a want of fertility of mind and imagination. With much of what Mr. Creswell says on this and other subjects no one will disagree, though the general opposition to registration is founded on a complete misapprehension of its intention as a means of satisfying the public that every man who calls himself an "architect" is at least competent in the elementary principles of construction and sanitation, without pretending to be in any manner superior as an architect, or as many who qualify by professional examinations now appear to believe. The measure, in fact, is intended to give the least distinction derivable from an examination test, so as not to make professional examination, as it is now, an invidious distinction, or a proof of all-round efficiency.

RECENT PROPOSALS FOR AN AMENDMENT OF THE LAW AND PRACTICE AS TO ANCIENT LIGHTS.

By PHILIP E. PROBERT, FELLOW.

It is, said Mr. Pidditch, generally agreed that the great body of case law which has been built up upon the basis of the simple enactment on the Prescription Act 1832, that "when the access and use of light to and from any dwelling-house, workshop, or other building shall have been actually enjoyed therewith for the full period of twenty years without interruption, the right thereto shall be deemed absolute and indefeasible," includes many judgments difficult to reconcile with one another, and that there is not to be deduced from them anything like a clear or definite rule by which the owner of an ancient light on the one hand, and the owner of property adjoining upon which buildings are about to be erected or increased in size, on the other, are able to ascertain what are really their respective rights, and to what limitations these rights are subject. The position of the doctrine of the 45° claim to a right for a special quantity of light for extraordinary purposes; the definition of what is meant by material and substantial injury to lights; the question as to whether, if sufficient light be left, it matters as to how much, beyond that sufficiency, is taken away. All these questions and others seem apparently to be insoluble by the Courts, and constitute a fruitful field for the production of differences and disputes between building owners and the owners of ancient lights, and the cause of constant recourse to the Courts at considerable expense in money, time, inconvenience, and irritation, by way of injunctions to restrain or actions for damages, with, in many cases, results which are satisfactory to neither party. Some have, indeed, gone further than this in their complaints of the state of the law, and have contended that the power given to the owner of even a very small and unimportant light to restrict, or in any case delay, the erection of important buildings, has led to serious hardships, and has in some cases opened the door to what can be described as little short of blackmailing operations. And it is clear to anybody who has much to do with light and air cases in the Courts that it is difficult for the ordinary legal tribunals to deal with these technical questions without great waste of time, and in many cases uncertainty as to substantial justice being done. Actuated by these considerations, the Royal Institute of British Architects, in the beginning of 1900, came to the opinion that an alteration in the law of ancient light was urgently needed, and placed itself in communication with the Surveyors' Institution, and the two bodies appointed a joint committee which reported on the subject at the end of 1900. The contents of their report may be summarised as follows: In the first place it is proposed to limit the right of the owner of an ancient light, where such right has not already been acquired, to a right to receive light sufficient for all ordinary purposes, but not to include a right to an extraordinary amount for special purposes. In the second place, the difficulty sometimes experienced of obstructing a light which would otherwise in the course of time gain dominant rights is obviated by its being placed within the power of the owner of adjoining property over which such rights would if acquired be exercised, to give a legal notice to have the same effect as though such obstruction had been put up and submitted to for one year. In the third place, there is a provision for certification and registration of the plans of buildings about to be pulled down, and I suppose, although the report does not distinctly say so, the identification of ancient lights existent in the old buildings. In the fourth place, there is a provision that no building erected after January 1, 1905, shall acquire any further rights of light and air where it abuts on any way used by the public as an access to various tenements. In the fifth place (and this constitutes one of the most important parts of the report), provision is made for the settlement of differences arising between a building owner and the owner of adjoining ancient lights by means of a tribunal formed of the surveyor for either party or of their umpire, with power to the umpire of determining "the right of the building owner to carry out his intended works, the

alteration (if any) necessary to be made in carrying out the proposed new buildings or alterations to prevent or lessen the obstructions complained of, and the amount (if any) of compensation of every description to be made to the owner, lessee, or occupier, the alterations or improvements to the adjoining premises by light-reflecting surfaces, enlargement of lights, heightening of premises, or other means, the amount of cost to be paid by each or either party, and generally all matters required to arrive at a settlement." There is also a provision for an appeal to a committee, consisting of an architect, a surveyor, and a barrister, empowered to decide whether and to what extent the proposed new buildings shall be amended or the dominant premises altered. In any case in which a larger sum than £500 is awarded either in money, damage, or works, or in which the interference with the proposed works exceeds £500 in value, there is power of appeal to the High Court. Then, side by side with the powers given to the surveyors, the tribunal, and the High Court, there is, in the sixth place, a provision that in any action to restrain a building on the ground of its interference with rights of light; and, whether an interim injunction has been obtained or not, either party may apply to a judge either to hear the same with an assessor or assessors, or to refer it to arbitration in the manner before provided. It will be seen, therefore, that the proposals which have been made really amount to this:—The basis of the law is so far defined as to eliminate from the rights of an adjoining owner any right to light for extraordinary purposes, and to limit them to a right to receive light sufficient for all ordinary purposes, and that the settlement of the question which may arise as to whether sufficient light has been left for all ordinary purposes may either proceed in a way similar to that obtaining in the case of party-walls under the London Building Act (except that the third surveyor or architect called in on light and air cases is to be an independent umpire, and not to act in conjunction with one or both of the *ex parte* surveyors) with an appeal to a technical committee, and beyond that to the High Court; or apparently he may still proceed in the old way by an application for an injunction to restrain, which may be referred by the judge to the arbitration before described if it appears to him the claim may be satisfied by damages. It may be useful to briefly consider the more important of the recent cases which have occupied the Courts which exemplify the accuracy of the view that some simplification of the legal basis for our practice in the subject is absolutely essential. In the Appeal Court case of "Brown v. Collings," decided in 1899, the Master of the Rolls, Rigby, and Vaughan Williams, L.J.J., concurring, said: "It was a question of degree whether there had been such obstruction or diminution of light as to render the premises uncomfortable or unfit for the ordinary purposes of habitation or of carrying on business. He came to the conclusion that a considerable quantity of light which had formerly access to the plaintiff's windows had been cut off by reason of the defendant's building. There ought to be an injunction to compel the defendant to pull down so much of his building as obstructed the access of light as previously enjoyed in the plaintiff's buildings." This was a case where the offending building was to be from 60ft. to 70ft. distant from the ancient lights, and the extreme height of same from ground to top of gable was 44ft. and no more, a portion of the offending wall would have been 32ft. high, and the Master of the Rolls, in his judgment, said he thought the defendant's building should not be above 25ft. high, and subsequent words he used indicated that it was his opinion that it was not enough to consider whether the plaintiff had a sufficient quantity of light left, but that what had to be considered was the amount taken away. This seems to be a strong judgment in favour of the contention that the owner of an ancient light is entitled to all the light he has enjoyed through it for the statutory period. It was not many months, however, before a decision embodying quite different principles was given by Mr. Justice Wright, who held, in the case of "Warren v. Brown" that a house is not necessarily entitled "to have all, or substantially all, the same light coming to its windows as during the twenty years," as this would "impose on servient tenements an unreasonable burden, and might involve great public inconveniences. Nor, if that were law, could there well be any presumption that so long as 45° of light or some approximate

Read at the recent Southampton meeting of the Surveyors' Institution.

coming to a window only a few feet away, simply

THE fifty-fifth session of the Architectural Association was brought to a fitting close on Friday evening by the annual dinner which took place at the Criterion Restaurant, Piccadilly-circus. The President, Mr. W. Howard Seth-Smith, F.R.I.B.A., occupied the chair, and was supported by Sir George Young, Bart., Major-General H. Trotter, Mr. W. Emerson, P.R.I.B.A., Mr. A. W. Seaman, M.P., Mr. Aston Webb, A.R.A. (past-President), Prof. T. Roger Smith (past-President), Mr. John Slater (past-President), H. D. Scarles Wood (past-President), Mr. F. T. Baggallay (past-President), Dr. W. J. Collins, L.C.C., Mr. R. M. Beachcroft, L.C.C., Mr. G. Laurence Gomme, F.S.A. (Clerk to the L.C.C.), Mr. W. J. Locke (Sec. R.I.B.A.), the Master of the Plumbers' Co., the Rev. H. Russell Wakefield, Rev. Dr. G. A. West, Professor F. M. Simpson of Liverpool, Professor F. J.

instruction, and would be welcomed by employer and student alike. The fact that the classes were to be conducted by private artists was a happy augury of success. The President also replied, referring to the great loss just sustained by the deaths of Messrs. Arthur Gales and J. M. Brydon. Mr. Gales was their Hon. Secretary from 1852 to 1855, and had been a generous friend to the Association; he had recently promised £250 to the New Premises Fund, and a few years since paid up all years' subscription. Mr. Brydon was one of the visitors to the class of Design, and aided them much by his kindly tact in criticism. The day classes would be carried on on a historically English basis, they would be slowly developed independently, founded and based on the experience of other nations. He defended the movement for educating as well as examining the professions as a wise and prudent step, and as one calculated to be of lasting benefit to its members. As to the everlasting question of new premises, he could only say that the committee had the matter deeply at heart; they hoped that in the course of the next year a site would be found and a scheme put before the members. Professor F. M. Simpson, in proposing "The Lecturers and Instructors," compared the educational facilities and well-paid staffs of Germany and the United States with that afforded at the Studio, 56, Great Marlborough-street, very much to the disadvantage of the latter. Professor F. E. Hulme responded. The concluding toasts were "Our Guests," given by Prof. Roger Smith, and responded to by Mr. G. L. Gomme and Dr. I. Owen; and "The Committee and Officers," proposed by Mr. F. T. W. Goldsmith, and acknowledged by Mr. G. B. Carvill. During the evening songs were sung by Mr. S. Constantinides, and musical sketches were given by Mr. Harrison Hill, the latter including a topical improviso to the melody of "The Vicar of Bray," in which the salient points of each speech were clearly introduced.

CONCRETE SUBWAYS FOR PIPES.

At a meeting of the Society of Engineers held at the Royal United Service Institution, Whitehall, on June 3, 1901, a paper was read on "Concrete Subways for Underground Pipes," by Mr. Arthur Taylor Allen. In introducing the subject the author referred to the construction of the first subway in England for underground pipes, which took place about the year 1860, in the City of London. This was followed a year or two later by one in the City of Nottingham. He noted the lack of progress there had been in the extension of these new arterial thoroughfares, for, beyond one being constructed at St. Helen's in 1898, very little had been done in that direction to minimise the evil resulting from the continuous breaking up of roadways for access to the numerous pipes laid under every thoroughfare. He gave a long list of streets broken up in the course of one year for obtaining access to pipes. He also pointed out the danger and inconvenience likely to arise from roadways being laid over a number of gas pipes, which might soon prove to be of insufficient capacity or become defective, and over water-mains that were laid years ago when the water supply was very limited. The author referred to the sections of the various Acts in force empowering public companies to break up streets after due notice, causing the total or partial blocking of a thoroughfare, interfering with traffic and operating temporarily to the prejudice of business houses, the owners having no claim for any loss sustained thereby. He then alluded to the increasing number of underground pipes, and the possibility of the provisions of the Rivers Pollution Acts being more rigidly enforced, and in the near future throwing upon some authorities the necessity of separate sewers for surface or storm water. The author then described the subways in London, Nottingham, and St. Helen's. To relieve doubt as to the possibility of severe frost affecting the water mains in the days he gave satisfactory thermometrical readings taken in the Albert-street subway, Nottingham. Turning next to the utility of subways, the author stated that by their construction access could be readily obtained for the purpose of inspection, alteration, or addition to any of the pipes present hidden and placed beyond inspection. He drew attention to the fact that after works of great magnitude had been undertaken in obtaining a pure water supply, to insure the health and safety of the population, the pipes conveying the supply were laid in a defective manner.

burst might remain undiscovered for a length of time, as was the case some years ago, when the first intimation of a leakage in the borough water mains was reported to him by the sewer men when repairing a sewer in close proximity to the mains. An efficient system of detection and prevention of water pollution or waste would be provided for by subways, and the life of iron pipes would be considerably increased. Electric and telegraph wires need no longer run along poles and roof fixtures; they could be put underground, thus rendering them less dangerous and more reliable and permanent. Having regard to economy of cost, capability of resistance, and rapidity of execution, the author suggested concrete as the most suitable material for such works, and referred to its practical value as exemplified by its extensive use in connection with works in general. In dealing with subways for large cities and busy thoroughfares where foot passengers experienced difficulty in crossing the street in safety, the author recommended that, in conjunction with the subway, underground conveniences should form a part of the scheme. Entrances would be erected in the centre of the street, so arranged that an easy and ready access (although private) could be gained from the first landing. This might be regarded as a peculiar suggestion; but he alluded to the revenue it was possible for it to bring in, as much as from £200 to £2,000 per annum having been cleared as profit for such accommodation. With regard to subways for suburban districts the author considered all large subways should have lateral ways, about 3ft. wide by 4ft. 6in. high, for the purpose of access and conveyance of gas, water, and other pipes; and he advocated making use of every available space by a specially designed iron bracket for the pipes. The author submitted a proposal for a subway under each footpath of all new streets to receive the water, gas, and other pipes, the subways to form part of the laying-out of the new street. He considered it necessary that the gas and water-mains should be in duplicate, the concrete wall nearest the house would be perforated with 2in. and 2½in. holes for the house services, thus obviating the construction and expense of lateral ways. The sewer would be laid under the road with the usual manholes, on the principle adopted in the present day, but with the addition of elongated eyes every 20ft., extending to each subway. The chamber (common to all house drainage) to be constructed in the bottom of the subway by and at the cost of the owner when requiring to connect with the sewer. This method, he contended, would insure the surface of the road being kept free from interference. The author gave the cost of some subways constructed in London as £15 per lineal yard, Nottingham £10 per lineal yard, and St. Helen's £7 2s. 4d. per lineal yard. He pointed out, however, that the information was of but little practical value and must be accepted with the greatest caution, it being impossible to make a useful comparison between the cost of construction at other places without a knowledge of the conditions of each case. Although the initial cost would prove heavy, he pointed out that there might be some compensation if the excavated materials proved suitable for the concrete work. The author considered that the cost of constructing subways should be borne by a loan for a period of 50 years, as the works come under the category of permanent works.

THE ROYAL EXCHANGE FRESCOS.

THE chronological scheme adopted by the Gresham Committee for filling in the panels of the Royal Exchange with works of art is as follows:—1. The Ancient Britons and Phœnicians trading on the coast of Cornwall (given and painted by the late Lord Leighton). 2. Alfred the Great repairing the walls of the City in the 9th century. 3. William the Conqueror granting a charter to the citizens of London (given by the Corporation and painted by Mr. Seymour Lucas, R.A.). 4. William II. building the Tower of London. 5. Henry II.: Foundation of the Hospital of St. Thomas of Acon. 6. King John sealing Magna Charta (given by the late Mr. John Paddon and painted by Mr. E. Norman). 7. Scene of a Folk-mote in St. Paul's Churchyard. 8. Edward II.: The famous iter at the Tower. 9. Edward III.: The entertainment of the Vintners' Company to the five Kings. 10. Richard II.: The insurrection of Wat Tyler. 11. Henry IV.: Sir Richard Whittington's charities (given by Mr. Abe Bailey and painted by Mrs. E. Norman and Henrietta Rieu). 12.

Henry VI.: The Charter of Philip the Good, Duke of Burgundy, to the Merchant Adventurers, 1446. 13. Henry VI.: Marching of the trained bands to Barnet. 14. Subject not yet settled. 15. The award of Lord Mayor Bittlesdon in the dispute as to the precedence of the Merchant Tailors' and Skinners' Companies (promised by these companies, and to be painted by Mr. Abbey, R.A.). 16. The Crown offered to Richard III. at Baynard's Castle (given by Mr. Carl Meyer, and painted by Mr. S. Goetze). 17. Foundation of St. Paul's School by Dean Coker (temp. Henry VII.). 18. The death of the opening of the Royal Exchange (given by the Mercers' Company, and painted by Mr. E. Crofts, R.A.). 19. Charles I. demanding the five members at Guildhall (given by Sir Samuel Montagu, and painted by Mr. Solomon J. Solomon, A.R.A.). 20. The Fire of London (given by the Sun Fire Insurance Company, and painted by Mr. Stanhope Forbes, A.R.A.). 21. William III. and Mary: Founding of the Bank of England. 22. William IV.: Opening new London Bridge. 23. Queen Victoria opening the third Royal Exchange (given by Mr. Deputy Snowden, and painted by Mr. Macbeth, A.R.A.). 24. Modern commerce (given by Mr. T. L. Devitt, and being painted by Mr. Brangwyn.).

HOW TO ESTIMATE: OR, THE ANALYSIS OF BUILDERS' PRICES. X.

By JOHN T. REA, F.S.I., Surveyor, War Dept.

LABOUR.—In foundations and walls where the joints are left rough, a bricklayer, supplied with materials by his labourer, can lay 1,500 bricks per day of ten hours, as, owing to the mass of the work, he can pack them in with both hands. In boundary and other walls where both faces have to be worked fair, not more than 1,000; and if they are carefully jointed and faced with picked bricks of a uniform colour, not more than 500 per diem, and then only in straight walling without many openings. The time spent is thus less for thick walls, and greater for thin ones.

A large builder told the writer that he estimated a bricklayer laid 500 inside and 300 facing bricks per day, which would be an average of 400 bricks over all the walling. As there are 380 bricks in a cubic yard, this would be roughly a cubic yard of brickwork per man per day. Allow one labourer to attend two bricklayers: hence a labourer's time is half a bricklayer's.

The labour per rod, therefore, in building brickwork in mortar, worked fair both sides, exclusive of pointing, may be taken as:—

For walls 1 brick thick in lime mortar, 5s. 4d. per day	£	s.	d.
Bricklayer and labourer at 13s. 4d. per day	10l.	6d.	10l.
10l. 6d. 10l. 10 hours	3	8	4
10l. 6d. 10l. 10 hours	3	8	4
10l. 6d. 10l. 10 hours	3	8	4
10l. 6d. 10l. 10 hours	3	8	4
10l. 6d. 10l. 10 hours	3	8	4
10l. 6d. 10l. 10 hours	3	8	4
10l. 6d. 10l. 10 hours	3	8	4

For the use of scaffolding, erection, and removal, 4s. per rod is the almost invariable charge. Then the valuation of a rod of stock brickwork, standard thickness, exclusive of pointing, 1 to 3, with joints, would be:

Brickwork in stone-lime mortar, 1 ft. 6 in.	£	s.	d.
1,300 bricks at 3s. per 1,000 delivered	7	10	6
Water, for wetting bricks only, say 5 dead.	0	0	6
Labour building, 1 day bricklayer and labourer	3	0	0
at 13s. 4d. 10l. 6d. 10l. 10 hours	3	0	0
Use of scaffolding, erection, and removal	0	4	0
2 cubic yd. of stone-lime mortar, 11 dead at 16s.	12	7	0
Add 10 per cent. profit, say	1	5	0
Total cost per rod	13	12	0

The cost per yard cube can easily be deduced from the foregoing by dividing £13 12s. by 11½, the number of cubic yards per rod, which gives:—

£13 12s. 0d. ÷ 11½ = £11 8s. 0d. cost per yard cube.

Similarly, the cost per foot cube, by dividing the same sum by 306, the number of cubic feet per rod:—

£13 12s. 0d. ÷ 306 = 20½d. cost per foot cube.

The cost per yard cube and per foot cube can, however, be detailed separately, with proportionate reduction in materials and labour, but the larger the standard taken the less waste, and the closer will be the investigation.

BRICKWORK IN COMMON MORTAR, 1 ft. 6 in.
For stock brickwork, standard thickness, exclusive of pointing, 1 to 3, with joints, would be:

super. of gauged arch requires ten bricks, including waste, as against seven bricks for facings.

	s.	d.
1,000 bricks at 55s. per 1,000	55	0
Extra labour in setting and pointing	0	0
Cost per foot run	13	0

	s.	d.
1,000 mitred bricks at 180s.	180	0
Cost per foot run	180	0

When the arch is set, the only labour required is the setting and pointing of the brickwork in the arch. The cost of the brickwork in the arch is as follows:

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PAVING.

Extra only on common Brickwork for Facings of best packed Stacks, laid in the usual manner, with the Wall joints. There are 27,210 super. in a rod, and as 7 bricks go to the square foot, this gives practically 2,000 facing bricks per rod, with allowance for waste. The item is merely so much labour for setting and striking joints, and a labourer will take 1 hour to select 1,000 bricks, or, say, 7 hours to select the 2,000 facing bricks required per rod. A bricklayer will occupy a day in striking the joints for the 1,000 bricks, or, say, 1 day in striking the 2,000 facing bricks necessary per rod.

	s.	d.
Selecting 2,000 bricks for a rod, 7 hours	3	0
Striking joints for 1,000 bricks, 2 days	16	8
Striking joints for 2,000 bricks, 2 days	16	8
Cost per foot super.	0	1

Detail of Common Brickwork for Facings, laid in the usual manner, with the Wall joints. Here there is extra for superior bricks, and for a better joint.

	s.	d.
Cost of 1,000 bricks per 1,000	55	0
Cost of 2,000 bricks per 1,000	110	0
Difference per 1,000	55	0

And as the cost of the brickwork per foot super, we now proceed:

	s.	d.
Cost of brickwork extra only at 20s. difference	11	0
Labour for pointing	0	0
Labour in setting and pointing	0	0
Cost per foot super	0	1

A bricklayer can point and lay 15 facing bricks in half an hour at 20s. per rod.

Detail of Brickwork, laid in the usual manner, with the Wall joints. This is merely labour, and can be done in the same proceeds. A bricklayer can do 10 yards per day, or 1 yard in a quarter of an hour.

	s.	d.
One-fourth hour brickwork at 20s.	5	0
Cost per yard super.	0	2

PAVING.

Extra only on common Brickwork for rubbed and gauged Archwork, laid in the usual manner, with the Wall joints. This is merely extra on the facing bricks, which have been already taken. One foot

super. of gauged arch requires ten bricks, including waste, as against seven bricks for facings.

	s.	d.
1,000 bricks at 55s. per 1,000	55	0
Extra labour in setting and pointing	0	0
Cost per foot run	13	0

	s.	d.
1,000 mitred bricks at 180s.	180	0
Cost per foot run	180	0

When the arch is set, the only labour required is the setting and pointing of the brickwork in the arch. The cost of the brickwork in the arch is as follows:

	s.	d.
1,000 mitred bricks at 180s.	180	0
Cost per foot run	180	0

When the arch is set, the only labour required is the setting and pointing of the brickwork in the arch. The cost of the brickwork in the arch is as follows:

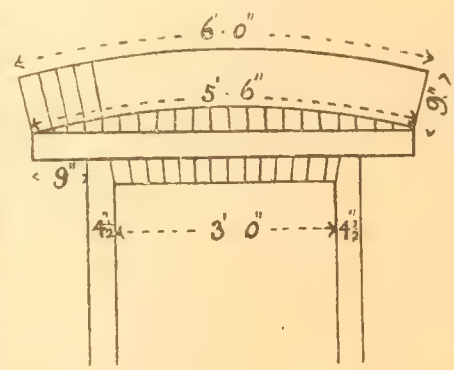


FIG. 1.

is one brick deep by one brick wide, width of joint. The arch is cut in the width by width of arch, which gives the axing required on the adjacent brickwork. This axing is the extra labour involved, for there is an additional trouble in building the arch itself, which has been included in the ordinary walling.

	s.	d.
6'0" extrados.	1	5
5'6" intrados.	0	2
3'0" skewback.	0	2
3'0" "	0	2
Cost per foot super.	0	1

13'0" width of arch, width of arch 1'5" 9'6" super. rough cutting and waste at 1'5" Add profit 1'7"

1s. cub is a common price. Sometimes the rough-cutting to skewbacks is taken separately.

Half-Brick Trencher Arch in Cement, and Leveling in Concrete.

	£	s.	d.
Cost of rod of brickwork in cement mortar	14	7	0

14'7" = cost of brickwork per rod super, 14'2" 1 1/2 brick thick

1s. 0 1/2d. = cost of ditto 1/2 brick thick

Leveling up with lime concrete at 10s. 5d. per yard cube

Rough-cutting, about 1 foot super, at 1 1/2d.

Cost per foot super.

It will be observed that the above includes profit throughout.

Extra on Common Brickwork for Moulded Courses.

This is one course of red moulded brick, measured extra only to common brickwork, and the cubical contents of which have already been taken in the latter. If header and stretcher be used alternately, allow two bricks per foot run. The number will be a trifle less, as one header and one stretcher, with two joints, would measure 1'11", but this extra length would allow for waste.

	s.	d.
1,000 red moulded bricks at 90s.	90	0
Cost of 1,000 stocks at 10s.	10	0
Difference	80	0

Therefore the cost, extra only, would show thus:—

	s.	d.
2 bricks at 55s. per 1,000	0	11
Extra labour	0	0
Extra labour in setting and pointing	0	0
Add profit	0	21
Cost per foot run	0	21

Mitres in ditto. The mitred bricks cost double the price of the moulded ones, and the detail would be worked out similarly.

	s.	d.
1,000 mitred bricks at 180s.	180	0
Cost of 1,000 moulded bricks at 90s.	90	0
Difference	90	0

	s.	d.
1 mitred brick at 90s. per 1,000	0	1
Add profit	0	0
Cost per mitre	0	1

All the labour and setting have already been included in the lineal dimension of the moulded course, as it is on this that the mitres are extra.

DAMP-PROOF COURSES.

Damp-proof Course of two layers of stout Slates, breaking joint, and laid in Portland Cement.—Countess or Duchess slates are generally used, and second quality are the best for this class of work, as they are thicker and cheaper. Slates are sold by the thousand of 1,200 delivered, and the area of a Countess slate would be 20in. x 10in. = 1 1/2 ft. super; but allow one slate to the square foot, reckoning for waste in cutting to suit thickness of wall. And as there are two layers, there would be thus two slates per foot super. for the damp-course.

	s.	d.
2 Countess second quality Welsh slates, at £9 per 1,200 in London	0	3 1/2
Cement mortar for laying ditto	0	1
Labour in cutting and laying	0	0 1/2
Add profit	0	5 1/2
Cost per foot super	0	6

Damp-proof courses of special kinds of asphalt are best laid by the expert when in large quantities.

FIRE-WORK.

Setting Grates and Stoves, and exceeding 40in. in width. A bricklayer and labourer would take from two to three hours to set an ordinary grate, and some common brickwork would be required for the backing, as well as fireclay for the fire-lumps.

	s.	d.
2 1/2 hours bricklayer 10d. and labourer 6d.	3	1
Brickwork and fireclay, say	1	2
Add profit	4	6
Cost of each	5	0

Ranges and kitcheners would cost a great deal more, depending upon the type of apparatus and the size of the opening.

PAVING.

Paving of hard sand Stacks, laid flat in Sand. This will require 36 bricks, and 1 cubic foot of sand, per yard super. The labour will be half an hour of a bricklayer and labourer.

	s.	d.
Thirty-six stock bricks at 35s. per thousand	1	3
1 1/2 cubic yd. of sand at 6s.	0	2 1/2
Labour, 1/2-hour bricklayer 10d., and labourer 6d. at 1s. 4d.	0	8
Add profit	2	1 1/2
Cost per yard super	2	4

Ditto on edge in Sand. Here 52 bricks are required per yard super, and a little more than 1 cubic foot of sand, owing to the additional number of joints. Time will be three-quarters of an hour.

	s.	d.
Fifty-two stock bricks at 35s. per thousand	1	9 1/2
1 1/2 cubic yd. of sand at 6s.	0	3 1/2
Labour, 3/4-hour bricklayer and labourer at 1s. 4d.	1	0
Add profit	3	1
Cost per yard super	3	5

Paving of hard sand Stacks laid flat in Mortar.—The quantity of materials will be the same, but labour will be three-quarters of an hour, as the spreading and filling-in of the mortar will occupy more time.

	s.	d.
Thirty-six stock bricks at 35s. per thousand	1	3
1 1/2 cubic yd. of lime mortar at 16s.	0	7
Labour, 1/2-hour bricklayer and labourer at 1s. 4d.	1	0
Add profit	2	10
Cost per yard super	3	1

It takes one hour and a half to make one hour in this case.

Fifty-two stock bricks at 5s. per thousand	2 10
14 1/2 cubic yard of lime mortar at 16s.	0 8
Labour, 1 hour bricklayer and labourer at 1s. 11d.	1 1
	3 10
Add profit	0 10
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(To be continued.)

THE SURVEYORS' INSTITUTION AT SOUTHAMPTON.

THE summer conference of the Institution of Great Britain was held at Southampton on Thursday and Friday of last week. The first day was devoted to meetings at the Hartley Institute, the second day being chiefly spent in excursions to nearby places of interest. An official reception inaugurated the proceedings on Thursday morning, when the visitors were welcomed by the Mayor of Southampton, Alderman G. A. Hussey, who expressed his regret that the President of the Institution, Mr. John Shaw, was unable to attend owing to indisposition. Sir John F. L. Rolleston, M.P., the President-elect, acknowledged the Mayor's remarks, and took the chair at the business meeting which followed. Mr. W. Burrough Hill, F.S.I., read a paper on "Southampton: Past and Present," in which he showed that the town had grown in a century from a population of 8,000 to one of 104,000. An exhaustive survey of the naturally-grown beauties and oaks of "The New Forest," together with the physical aspects and geological features of the district environing it, was read by Mr. F. J. Smith. Mr. Philip E. Mithch next read a paper on "Recent Proposals for an Amendment of the Law and Practice as to Ancient Lights," in which he described the efforts being made to bring about an amendment on that subject of perennial interest to most surveyors, provincial as well as Metropolitan, the law and practice of Ancient Lights, and discussed the proposals formulated. (We give the address in *note on p. 755 ante*). A short discussion followed, in which Mr. Horsfall, of Halifax, and Messrs. W. Woodward and Howard Martin, of London, took part. The last paper read was by Mr. Hall Fell, on "Liability for Farm Fires caused by Stray Sparks from Engines." In the evening the members dined together at the South Western Hotel, Sir John Rolleston, M.P., occupying the chair. On Friday, after visiting the Ordnance Survey Office and the Docks and ancient walls, the members divided into two sections, one proceeding to Winchester under the conduct of Mr. W. Burrough Hill, the other going to Lyndhurst Church, Stony Cross, and Brockenhurst under the guidance of Mr. W. F. Perkins.

The annual general meeting of the institution was held on Monday at the institution premises in Great George-street, Westminster. Sir John F. Rolleston, M.P., the president-elect, occupied the chair in the absence, through illness, of Mr. John Shaw, the retiring president. The annual report, read by Mr. Julian C. Rogers, the secretary, stated that the institution now probably included in its list of members most of the surveyors of standing in the United Kingdom, and it had a total in the various classes of 3,200 compared with 3,096 a year ago. The total investments, calculated at current prices, represented a sum of £13,724 19s. Of 112 candidates who sat for the last preliminary examinations 111 passed, and of 362 who went up for the different professional examinations 246 passed. As was the case last year professional examinations were held contemporaneously with the English examinations both in Scotland and in Dublin. The cost of the construction of the new premises was £30,337, to which had to be added architects' commission, law charges, &c., making a total of £34,198, while the outlay on new furniture and fittings amounted approximately to a sum of £1,000. The whole outlay had been met out of the accumulated funds, and no debt whatever remained upon the building. There had been large additions to the library during the year, and a further outlay would shortly be made on the purchase of books. The present number of volumes was approximately 8,000. During the session the council had promised financial support to, and had nominated two of their members to act on, a joint committee of the Surveyors'

Institution and the Royal Institute of British Architects, appointed for the purpose of collecting and tabulating information from all parts of the country as to damage to buildings resulting from lightning, to discover, if possible, how far buildings were rendered lightning-proof by modern systems of protection, and to ascertain what improved methods might be adopted. The council also decided during the session to co-operate with the Royal Institute of British Architects on a joint committee with reference to the amendment of the law and practice as to ancient lights. The committee had since decided to draft a Bill for introduction into Parliament. Mr. E. H. Blake formally moved, and Mr. M. P. Holmes seconded, the adoption of the report, which was agreed to. The chairman, replying to a vote of thanks passed to the late president and members of the council, said the council was representative of the various branches of the profession. The chairman was then invested with the president's chain of office, and he afterwards presented the prizes gained during the past session. The principal award—the "Penfold" gold medal—went to William Edward Trent, who, in the building sub-division of Division IV., headed the list of Fellowship candidates with a total of 802 out of a possible 1,000 marks.

WORKS IN WOOD AND WOOD-CARVING.

THE fifth Exhibition of Works in Wood, under the auspices of the Worshipful Company of Carpenters and of Joiners, at Carpenters' Hall, shows a decided improvement on the last display. In the entrance hall, the Trades Training School, Great Titchfield-street, we find several well-executed exhibits of work by the students of this excellent school, carried on under the joint direction of the companies of Carpenters, Joiners, Painters, Stainers, Plasterers, Tilers, and Bricklayers, &c. A cupola of ogival outline, showing half the timbering and half the boarding, is worth notice, besides several specimens of roof-trusses, partitions, a laminated arched rib roof, a staircase, &c., many of which display good design and executive skill. Division I., Class 1., Section A, in the large hall on first floor, comprises various roofs and trusses. The first prize, by A. Norton, is a model of hipped roof of low pitch for slating to a scale of 1 1/2 in. to the foot, with four dormers, one at each end. It is a capital specimen of handiwork, showing the rafters and ties, the boarding, fillets for lead valleys, and chimney-stacks. A second prize is awarded to G. F. Lay for model of Mansard roof-trusses with dormers. A model of roof for tiling, one end hipped and the other half-hipped, with dormer, receives a third prize, given to H. Fox. Models of trussed roofs with joints in class 2 are interesting examples of trussed and framed work. A special prize is given for a king-post roof to A. Sewell, a second prize to E. P. Trent for a Mansard roof-truss, showing floor beam and upper room in roof, cornice and parapets, struts, &c.; and a first prize to J. S. Hopper for king-post roof and three joints, exhibiting connections of king and principals, king and struts, &c. Class 4, section B, comprises models of centring for arches. No. 13 is a fine model of centring for masonry arch, 150ft. span. The arch is segmental or catenarian in curve. The construction evinces a sound knowledge of constructive carpentry; the vertical posts at intervals, with their struts and braces, are arranged to preserve the curve and to conduct the weight downwards, so as to avoid any cross strain. A first prize and special gold medal are given to this model as the best exhibit in Division I., which is by J. Colburn. Every part of this model has been carefully studied.

A model of centring for skew arch, by C. Hickmott, apprentice, is awarded the third prize, and the second prize is given to A. Duley, apprentice, for centring. Class 5 is devoted to the subject of shoring and derricks for cranes. We see a model of shoring of a capital of column No. 19, also shoring up a house, for which a second prize is given, besides models of derricks. For a four-legged derrick for two cranes, F. S. Judd receives the first prize, a very skilfully-executed model; the legs are braced together near the top. H. Bolton takes the second prize for a three-legged derrick, and C. F. Till a third prize for staging for derrick.

In Division 2 we notice a model of framed partition by W. Hopper, takes the first prize. It

is for two stories, with a centre opening in the lower floor, and two doorways in the upper story. Above the heads of openings are framed trusses. The student has skilfully arranged his struts to throw the weight on the sills and outer walls. The door-posts, heads, sills and inter-ties, studs, are all shown, and well proportioned. We also notice a curved balcony with hood, by E. Sudds (second prize), models for framing octagonal tower and a spire. No. 30 (W. E. Saunders) receives a first prize for model of vaulting of a circular corridor—a very excellent piece of work in which the arches and groin ribs are cleverly and neatly worked out. We notice also several models of joinery in Division 3, one a model of staircase in oak, a spiral staircase by S. Savill (first prize), and a model of circular staircase with landing (second prize) by H. Treas, with polished handrail and newel; also model of a sash-frame (weightless) with lock ventilation, which takes a first prize, by C. E. Hadlow; bay windows, window-frames and linings, &c.; models of panelled doors, one a six-panelled circular-headed door, for which a special bronze medal is given (No. 45); also a first prize for same subject in radial frame to W. H. Williams. A special bronze is also awarded to T. Skinner (apprentice) for a double floor, and to T. R. Braybrooks for a church-seat (No. 67). In Division 4, Class 2, a second prize and bronze medal have been awarded to Joseph B. Hoskins, a joiner's apprentice, in the employment of Messrs. Harry Hems and Sons, Exeter, for a library arm-chair of hardwood. In Division 5, Class 7, Thomas M. Butcher, also in Messrs. Hems's studios, has gained the first silver medal and £5 for a cleverly-carved statuette in oak, representing William of Orange after his landing at Brixham in 1688. In Division 6, Class 3, Fred George Knapp, also an apprentice in the employ of the same firm of Exeter carvers, takes the first prize of £2 for three large patterns of diverse designs.

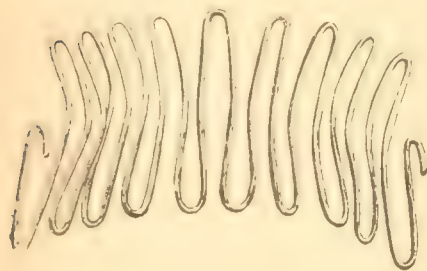
Passing over several interesting exhibits in this division, we come to several specimens of woodcarving. We can only specially mention a carved walnut casket (No. 112) of very chaste design, with carvings in light wood; a carved pilaster, a study from Grinling Gibbons, from the solid block, for which a special silver medal has been awarded to C. Milson; the carving in high relief (No. 142a); a carved seat, with flat incised foliage in the back, very quiet and simple, in walnut (No. 166), by Miss V. Stuckey; and an oak cabinet, with carved doors and sides (special prize), by Miss A. G. White, very pleasing and artistic in arrangement. In another division is a red carved oak panel, which receives the second prize, by H. G. Ratcliff, and a walnut panel carved by F. E. Horsman (first prize), chiefly strapwork and foliage. The Victoria and Albert Exhibition, South Kensington, send, as loans, a fine specimen of oak panelling from an old house in Exeter, about 1600, with carved frieze and pilaster, flat in treatment, and of refined Elizabethan character; also another example from old house near Waltham Abbey, Essex, of Early 16th century. The designs for wooden and half-timbered dwelling-houses, of which there are several, contain only two or three designs of any merit in plan or design. No. 214, by J. E. Goldthorp, and designs for cottages by H. J. Sturges (220) and G. J. Hallam, for which second prize silver medals are given. In the Soane Exhibition we also notice a very fine carved pilaster, lent by Messrs. Gillow and Co., of Italian Renaissance design. In this section is likewise an interesting collection of nine ancient misereres, lent by Messrs. Harry Hems and Sons, of Exeter. One of them is from the well-known and unrivalled series of fifty Early English misereres in Exeter Cathedral, made by the direction of Bishop Bruere, early in the 13th century, at once the oldest and finest collection of misereres in the world. Upon one of them is carved the earliest representation of an elephant in existence in this country, the hock of the quadruped's hind-legs being carved wrongly by the mediæval craftsman, who without a doubt had never seen such a beast in his life. During the restoration of the choir of Exon's Cathedral by the late Sir G. Gilbert Scott, R.A., some alterations took place in the plan of the stalls, necessitating having one less than heretofore. The present miserere was, therefore, never reused, and has since been preserved in the Chapter House. It is now shown by the kind permission of the Dean and Chapter, and with the approval

Early 15th-century work, removed from the Collegiate Church of St. Michael, at North Cadbury in Somersetshire, early in the last century, and which still surrounds the great hall in the Exeter Guildhall. To Professor Roger Smith, of University College, Past-Master of the Carpenters' Company, who was one of the judges, we believe, much of the success of this exhibition is due.

THE "SCORCHER" FUEL-SAVER.

The sketch shows a simple but exceedingly efficient little device invented and patented by a lady for economising fuel in the ordinary domestic firegrate.

It is made, as will be seen, from ordinary steel



wire, bent into the shape shown—something like a half-basket. This is fitted into the firegrate, the hooks being slipped on to the top front bar, when the "scorcher" forms a semicircular "basket" inside the grate.

The fire is laid and lit inside the "scorcher," the space at the back being left unfilled. The result is that an air-chamber is formed all round the "scorcher," thus greatly increasing the heat

with a ready means of selecting girders, stanchions, roofs, &c., showing their behaviour under various loads, and other details. It is well known by all practical men that stanchions are often loaded on one side, especially those at the corners of building, and that occasionally failure has taken place. For special conditions of this kind the rules are given for computing the stresses. So, also, the deflection of girders may be so great as to crack the plaster or brickwork above, and tables are provided for this contingency. The sections of Messrs. Homan and Rodgers' standard rolled steel joists are full and concisely given. Each section illustrated gives dimension, moment of inertia, coefficient, moment of resistance, and weight per foot in pounds. The sections of compound girders and stanchions are equally comprehensive, and each joist and plate of which it is built is described; the weight per foot, minimum area, moments of inertia, coefficient, &c., and the safe centre loads in tons are given in a table. We especially draw attention to the calculations for the eccentric loading of stanchions, already noticed, and the stresses on columns and the examples. The table of maxima moments, and deflections for eccentric loading, and the calculations for an eccentrically loaded girder are instructive, and the examples worked out showing the maximum stress from bending moment and the stress due to distortion will be found of value. Many valuable data and tables, including floor loads, and safe distributed loads in tons on rolled steel joists will be found. Near the end of the book the calculations for foundations of concrete and bedded rolled joists, are very useful, and the American or Chicago practice of distributed foundations is shown also. The formula for obtaining depth of concrete block is given. The safe working stress of concrete is taken at 60lb. per square inch. The diagram of standard shapes of roof principals, roof trusses, and the tables of axial stresses in members for different types, pitches, &c., are very necessary, and will be particularly useful to the architect in designing his steel trusses, and in saving the labour of calculating the stresses. The manual, in truth, contains all the advantage of a catalogue of useful sections with their safe loads, and a textbook for professional reference. Every architect should obtain a copy.

THE SILCHESTER EXCAVATIONS.

THE exhibition of antiquities found at Silchester during the course of last year was opened to the public on Monday at the rooms of the Society of Antiquaries, Burlington House, and will remain on view till Saturday in next week, the 15th inst. Last year's excavations were confined to four of the insulae into which the area has been divided, numbered 23 to 26. Insula 23 formed the northernmost of the unusually large squares in the central portion of the town. Here the late Rev. J. G. Joyce unearthed a house of considerable size so long ago as 1865. Later research has revealed an additional series of chambers to the north-east, which evidently formed part of the same dwelling. Another house of large size with several mosaic pavements was also uncovered on the east side of the insula, and in the mouth of its courtyard was a small square building devoted to sacred purposes, raised round an earlier structure of the same character. The pits and wells in the immediate locality yield over 100 whole vessels of all kinds and sizes, and also a hoard of smiths' and other iron tools.

In insula 24 were found two houses, one of which was large, peculiarly planned, and possessed numerous mosaic floors. Other buildings encountered by the excavators near the north gate were apparently connected with dye-works; while in insula 26 the late Mr. Joyce's work was supplemented by the discovery of the complete plan of a house partially revealed by his industry. The same area contained three other structures.

Among the metal objects found last year are a padlock (similar in character to those still used in China), a farrier's tool, mowers' anvils (similar to those still made in Birmingham for exportation to France and Spain), cooking utensils, bucket handles, many carpenters' tools, and two candlesticks. The collection also includes numerous specimens of coloured wall-plaster, and a section of a pavement combining the *opus sectile* with the *opus tessellatum*. The whole collection will eventually be placed for arrangement under the charge of Mr. George E. Fox, F.S.A., the curator, in the Museum at Reading.

The statement of accounts furnished by Mr. F. G. Hilton Price, hon. treasurer of the fund, reveals an expenditure of over £500 during the last twelve months. The balance in hand is considerably less than £20; and the ensuing year's operations will cost at least £500.

CHIPS.

The Borough Council of Camberwell have decided to promote a Bill for the compulsory acquisition of One Tree Hill in connection with the proposed new burial-ground, to acquire another 1½ acres of freehold land adjoining the site, and to bear half the cost of making a 40ft. or 50ft. roadway to Brockley. The council have further resolved to contribute one-third of the net cost of the street-widenings in connection with the London County Council tramways-scheme. This proportion amounts to about £40,000.

The Middlesex County Council are about to apply for several additional lines of light railways in the county. An engineer will be appointed to prepare the working drawings and supervise the construction of the lines. The Light Railway Commissioners have submitted to the Board of Trade for confirmation an order made by them for the construction of light railways in the parishes of Edgware, Finchley, Friern Barnet, Hendon, Hornsey, Kingsbury, Little Stanmore, Southgate, Tottenham, Wembley, Willesden, and Wood Green.

The Bristol City Council have decided to carry out the construction of the Malago sewer, which formed part of the general sewerage scheme of 1900, at an estimated cost of £27,000.

An important addition to the recent discoveries of Roman remains at Dorchester, Dorset, has just been made. While some workmen were making excavations for a house in the road known as Icen Way, in the eastern suburbs of the town, they came upon a Roman floor more than 22ft. long, and about 7ft. wide. So far as is at present disclosed, the design is not so ornate as that of the pavement which has just been deposited in the county museum, but it is, nevertheless, a discovery of great antiquarian interest.

Some excavations for foundations for a new house near Berewick-road, Wyke, revealed, a few days ago, some souvenirs of the old Roman occupation of the country. The excavators came across a large pot of coarse pottery, which was broken by the pick of the fossor, and within it were four small vases, all of different shapes. These were got out unhurt, and proved to be from four different "pot works"—Upchurch (Kent), Shropshire, Headington, and New Forest. The site of the discovery is not far from a Roman road.

Dr. Tristram, Chancellor of the Diocese of Ripon, held a Consistory Court in Trinity Church, Ripon, last week, with respect to an application by the vicar and churchwardens for a faculty to take down the north gallery, remove the organ from the south and re-erect it in the north transept, at the same time enlarging it; bring forward the communion rails, covering the vestry doors in the chancel with curtains, and constructing a vestry in the tower of the church. The cost of the improvements was put down at £394 15s. The faculty was granted.

Cardinal Vaughan has granted permission to Lady Mary Howard to erect a Roman Catholic church in Mile End-road to the memory of her sister, the late Lady Margaret Howard. The church is estimated to cost over £7,000.

The first sod of the Welshpool and Llanfair light railway was cut by Viscount Clive on Friday. The line will be eight miles long and open, up an agricultural district hitherto untouched by railway or canal accommodation. It will form a junction of the Cambrian Railways Company at Welshpool, and its terminus will be Llanfair. The line will be narrow gauge, and will be doubled at the various crossing places. It presents no engineering difficulties, and has been planned by Mr. A. J. Collin, C.E., the engineer of the Cambrian Railways Company. The contract has been let to Mr. J. Strachan. The railway will cost £45,000.

Mr. J. Passmore Edwards has signified his intention of presenting busts of John Milton and Daniel Defoe, from the chisel of Mr. George Frampton, A.R.A., to the Cripplegate Institute. Milton was buried in the Church of St. Giles, Cripplegate, which also contains a memorial bust of the poet, which was placed there in 1793 by Samuel Whitbread, the friend of Sheridan. Defoe was born in the parish.

The Chester Corporation are about to extend the buildings and accommodation at their fire brigade station in Northgate-street, and the owners of the freehold (the charity trustees) will sell the site for £1,500. This offer the corporation have decided to accept, subject to the Local Government Board's sanction to their obtaining a loan of £4,600. Colonel C. H. Luard, C.E., on behalf of the board, held an inquiry at Chester into the matter on Friday.

CONSTRUCTIONAL STEELWORK.

Messrs. HOMAN AND RODGERS, 61 17, Gracechurch-street and Vauxhall Steel Works, have published a very useful little handbook, in pocket-book form, on constructional steelwork, containing a list of the various sections of steelwork, and a list of the various sections of steelwork, and a list of the various sections of steelwork.

OBITUARY.

The death of Alderman G. E. Wallis, builder and contractor, took place at his residence, Elverton, Boxley-road, Maidstone, on Friday, from an affection of the heart. Mr. Wallis, who was in his 75th year, started in business in partnership with the late Mr. James Clements in County-road, Maidstone, as a builder, but a few years later the partnership was dissolved, the present firm of G. E. Wallis and Son being then formed. Mr. Wallis retired from active participation in the business some eight or nine years ago, being succeeded by his three sons. His firm has for years carried out many of the principal contracts in the town and elsewhere. He had, with slight interruptions, been a member of the Urban District Council since 1876, and since November, 1897, had been an alderman. He was for many years chairman of the Plans Committee.

CHIPS.

The consecration of burial ground and dedication of three stalls at Lamesley took place last week. The carved oak stalls are the work of Mr. H. J. Wooton, Heaton, Newcastle, and are four in number.

The sales at the Mart this week, as reported at the Estate Exchange, amount to £15,887. The sum registered in the corresponding week of last year was £10,263.

The Bishop of Truro has opened the new wing of the Truro Diocesan Training College for School-mistresses, which has been erected at a cost of £1,700 by Mr. George Miners, Marazion, from the designs of Mr. Oliver Caldwell, F.R.I.B.A., Penzance. The school has had 40 pupils in residence, and the extension will furnish accommodation for 20 more. The new wing comprises four stories. In the basement are dining-room (40ft. by 24ft.) and kitchen; on the ground floor are the lecture theatre, drawing and class rooms; and on the first and second floors are 20 cubicles, lavatories, bathrooms, w.c.'s, and teachers' bedrooms and sitting-rooms.

The Mayor of Aberystwith laid, on Friday, the memorial-stone of a promenade which is being made around the Castle Grounds at a cost of £1,000.

In response to the appeal for funds towards the restoration of St. Paul's, Ball's Pond—as it was formerly called, and now known as St. Paul's, Canonbury, one of the earliest churches built in Islington—contributions amounting to £500 have been received. The work is to be commenced this month, but another £500 is still required to enable it to be completed.

The fourth of a series of memorial windows in St. Mary's Church, Chard, has been erected in the north aisle of that church. The window contains in the centre light a figure of the Virgin and Child, with, on either hand, single figures of Mary Magdalen and Mary, the wife of Cleophas. The work has been executed by Messrs. F. Drake and Sons, of Exeter.

It is asserted that the spire of Wren's church of St. Mary-le-Bow has "settled" owing to recent excavations under Cheapside, and that it is now 23in. out of the perpendicular.

The Duke of Devonshire opened on Friday the new buildings erected in connection with the Netherthorpe Grammar School, Derbyshire, while subsequently he opened a large new central school at Chesterfield, which has been built by the local School Board.

The North-Eastern Railway Company have at present in course of construction, near Jarrow-on-Tyne, further relief storage sidings for loaded coal wagons, between Boldon Lane and Brockley Whins; a siding for goods trains, and a siding stage for locomotives, at Boldon-lane sheds. The company are also engaged in extending their wagon-repairing shops in Green-lane, and other alterations and extensions are being effected in the district at an estimated cost of between £30,000 and £40,000.

An American organ hitherto used in the services of the Lawson Memorial United Free Church, Selkirk, was on Sunday superseded by a two-manual pipe-organ, built by Mr. J. Binns, Bramley, Leeds, and costing, with structural alterations, over £900.

Mr. H. E. Duke, K.C., M.P., distributed the certificates on Saturday to plumbers of Devon and Cornwall in connection with the examination of the National Registration of Plumbers at a public meeting in the Plymouth Technical Schools, presided over by the Mayor.

The church tower of St. Mary's, Washfield, Devon, has just been restored, while a new bell has been added, and the remaining peal has been recast and rehung, the cost of over £500 having been borne by Mr. John Coles, of London, who is a native of the parish.

Building Intelligence.

BASFORD.—The stone-laying ceremony in connection with the new Wesleyan school-chapel, Basford, took place yesterday. It is part of the larger scheme for the erection of a church, school, and manse, for which plans by Messrs. Ford and Slater, M.S.A., architects, Burslem, were selected in open competition some eighteen months ago. The school is planned in the form of a cross, and comprises an assembly-room, four classrooms, entrance porches, heating vault, &c. Externally, the building will be eased with red facing bricks, and have moulded terracotta dressings. The amount of the contract is £1,255. The architects are Messrs. Ford and Slater, of Burslem.

BIRKENSHAW.—Memorial-stones of a new Wesleyan Chapel were formally laid on Saturday at Birkenshaw, near Bradford. Birkenshaw has long been a stronghold of Methodism. It will replace a chapel erected about the year 1729, and will be built on an adjoining site on the Bradford and Wakefield-road. The style is Decorated Gothic, and the material will be stone. The architects are Messrs. Walker and Gifford, of Bradford and Manchester. The chapel will have nave, chancel, and transepts, and will afford accommodation for 150 worshippers on the ground floor, and 90 in the gallery. The internal wood-work will be of pitch-pine; the windows will have stone tracery heads, and be filled with leaded lights. The chapel is to cost about £4,000. At a later date it is intended to erect a Sunday-school and caretaker's house.

BIRMINGHAM. The foundation-stone will shortly be laid of the new church of St. Luke, Bristol-road. The plans, prepared by Mr. Edward Mansell, show a far more imposing edifice than the old building, which was condemned as no longer safe, and had to be demolished. The new church has been designed in the Perpendicular style, and will accommodate about 800 persons on the ground floor. It will have nave, chancel, and aisles, with a tower 121ft. high at the corner of Bristol-road and St. Luke's-road. The clergy-vestry will be on the north side of the chancel; the choir-vestry and organ-chamber on the south side; the clergy and choir-vestries will communicate by means of an ambulatory contrived in the chancel east wall. One of the special features of the design is the large classrooms placed under the chancel and vestries, the fall of the ground favouring this construction, separate entrances being provided thereto from St. Luke's-road. Children from the Sunday-schools, which are situated behind the church, have a separate entrance, without steps, to the church from the school playground. The rebuilding will entail an outlay of about £13,000, towards which there has been promised about £8,000.

HOLBORN. Messrs. Smith and Coggin's detailed specification and estimate for the erection of the proposed new casual wards for the Holborn Guardians has been forwarded to the Local Government Board. The cost of the building is estimated at £9,416, furnishing generally at £300; architect's, quantity surveyor's, and clerk of works' charges at £1,000; cost of raising the loan and a sum for contingencies at £284—making a total estimate of £11,000. The Local Government Board have been asked to transmit to the guardians the necessary formal resolutions to be passed preparatory to their raising a loan for this amount. The board of guardians have decided to award premiums of £25, £15, and £10 to three architects who have submitted the "Cities," "Old Holborn," and "Pauze" competitions, with resolutions previously passed.

LIVERPOOL.—The new Roman Catholic church of Our Lady of Lourdes and St. Bernard was opened last week. The church, which has been built next to St. Bernard's Schools, consists of a nave and aisles, with baptistery and porches at the western end, and a chancel, with two chapels and sacristy. The nave, which is 83ft. by 48ft., consists of five bays, four of which are divided from the aisles by an arcading with stone shafts and moulded caps and bases, the fifth bay being occupied by the organ gallery. Two entrance porches, one at either side of the west wall, extend the width of the front to 77ft. The chancel, square-ended and flanked by a chapel on each side, is lighted by two side windows, and by a rose window in the gable, the latter being filled with stained glass depicting the apparition of Our Lady of Lourdes to Bernadette, while a second

window representing our Lord, with St. Bernard and St. Mary Magdalen, has been placed in the north chapel. The church will be heated by means of hot-water radiators, and furnished throughout with electric light. The cost of the fabric is about £5,500. The building was done by Messrs. Roberts and Robinson, contractors, Liverpool, from designs and under the superintendence of Messrs. Pugin and Pugin, architects, of London and Liverpool.

WHITBY. The block of new buildings which has just been completed for the Whitby and Monkseaton Urban District Council was formally opened on Saturday. The walls are faced with deep-red pressed bricks, while the oriel and other windows and cornices are of dressed stone. From the entrance-hall the offices of the clerk and the rate-collector are found on the right hand, and those of the surveyor and the sanitary inspector on the left. Each of these offices is about 18ft. by 16ft. On the upper floor is the council-chamber, 30ft. long by 18ft. 6in. wide by 15ft. high. It is furnished with a carpet and panelled ceiling, and fitted with two fireplaces and carved oak mantelpieces. There are also two committee-rooms, one 18ft. by 15ft., and the other 16ft. by 15ft. Above these rooms there are three attic bedrooms for the caretaker. These constitute the main block; but there are, besides, two separate outbuildings, one being the fire-brigade house and the other to provide storage. The buildings have been designed by Mr. J. P. Spencer, architect, of Newcastle and North Shields, under whose supervision they have been carried out by Mr. James Douglass, contractor, of Cullercoats. The total contracts, including furnishing, amounted to £3,400.

WIGMORE-STREET. W. A. concert-hall has been erected by Messrs. Bechstein adjoining their pianoforte show-rooms in Wigmore-street, from plans by Mr. Thomas E. Colcott. The hall is approached from the street by a wide corridor 55ft. long. A dado of alabaster surmounted by a frieze of Verona marble runs the entire length, and the floor consists of tessellated black and white marble. The hall itself is 72ft. long, 41ft. wide, and 22ft. high. It contains 500 stall seats, and additional accommodation for 80 people in a balcony facing the platform. This is located in an alcove, semi-circular in shape, and surmounted by a cupola ornamented by a coloured bas relief designed by Mr. Moira and carried out by Mr. F. Lynn Jenkins. The subject is the Ideal inspiring the Art world.

A Board school was opened at Littlemoor, Pudsey, on Monday. It has cost, including land and furnishing, about £7,000, and provides accommodation for 600 scholars.

Dr. E. P. Manby, Local Government Board inspector, held an inquiry at the public offices, Egremont, on Monday, with reference to the application of the Wallasey Urban District Council for sanction to borrow £15,500 for extending the accommodation at the Mill-lane Infectious Diseases Hospital. It was proposed to extend the hospital accommodation by the addition of a 24-bed pavilion, the reconstruction and enlargement of the administrative block, the reconstruction and enlargement of the laundry, the erection of a porter's lodge and main entrance fronting Mill-lane, the erection of a new vanhouse, mortuary, ambulance, disinfectant, engine-house, boiler-house, &c.

St. Peter's Church, Ringland, has just had added a new oak moulded, carved, cusped, and tracery-panelled pulpit, surmounted on a moulded stone base. The chancel fittings include the elegant ancient poppy-headed bench ends, worked as ends to new choir seats; the old deal communion rail with balustrading has been replaced with a well-designed oak rail on circular columnettes and cusped tracery spandrels. The work has been designed by Mr. Arthur J. Chambers, architect, of Norwich, and carried out by Mr. Robert Wegg, builder, Norwich.

At the meeting on Tuesday of the Birmingham City Council, the Lord Mayor announced the receipt of a communication from Mr. J. T. Middlemore, M.P., finally withdrawing the offer of pictures which he made in October, 1898, and again in 1900. The pictures were offered to the city on condition that the needful extension of the Corporation Art Gallery was made.

The Basingstoke and Alton line, the first in England authorised under the Light Railways Act, 1896, was opened for passenger and goods traffic on Saturday. Leaving the main route of the London and South-Western at Basingstoke, the new line, nearly thirteen miles in length, and of standard gauge, possesses three intermediate stations—at Cliddesden, Herriard, and Bentworth and Lasham.

Engineering Notes.

LEEDS. The work of widening the bridge at St. Asaph, over the Water of Leith, and the widening of the bridge at Hamilton-place, Glasgow, is now completed. The widening on the west side provides an addition of 9ft. to the width of the bridge, while the works just completed on the east side give an additional 4ft. of width on the bridge, and on the width of a distance of 90ft. along Hamilton-place. The former narrow corner at this point has been replaced by a curve on the bridge parapet, obtained by the unusual expedient of constructing a curve in the bridge deck. The new elevations of the bridge are designed in Baronial style. The ends of the abutments are brought up with the bridge deck, and the bridge is decorated with machicolated copes. The parapets and corbels are continued over the spandrels of the arch, and here the latter is pierced at short intervals with machicolated recesses in the lower course. The other portions of the decoration are in keeping with the general character of the bridge. The new bridge will at Hamilton-place be similar to the river bridge and cope, with wrought-iron railing, divided into two bays by circular stone shafts, resting on projecting circular corbels. The width of the new bridge between the parapets is 55ft., of which 16ft. is allocated for foot pavements, leaving a roadway of 35ft. The works have been carried out to the plans of Mr. P. H. Roberts, the city road surveyor, at a cost of £2,000.

WITHAM. The new county bridge over the River Brain has just been completed, and the road over it opened for traffic. It is of steel on brick abutments, and has been designed and carried out by the engineer to the County Council, Mr. Percy J. Sheldon, Assoc. M.Inst.C.E., the contractors being Messrs. J. Smith and Son, of Witham, Messrs. Lewis and Lewis, of Fulham, supplying the steelwork. The whole cost of the new bridge has been £1,700, and the roadway having been lowered about 2ft. 6in., and widened from 22ft. to 36ft., a great public improvement has been effected.

COMPETITIONS.

LEEDS. The new bank competition held among local architects recently at Leeds has been settled in favour of Messrs. Oliver and Dodgshun, of that city, the second premium being awarded to Messrs. Perkins and Bulmen, of Leeds.

The West Promenade at Rhyl, which has been constructed at a cost of between £5,000 and £6,000, was recently opened for traffic. It provides the missing link wanted to complete a grand circular drive of four miles round the town, and gives a total length of 4 miles of promenade, two miles on a hill, or on the sea front.

Mr. T. D. Roberts, C.E., late divisional engineer to the Great Western Railway Company, died on the 28th ult., at his residence, Penrill, Newport, Mon.

An inquiry was held at the church-room, Barrow-on-Soar, on Thursday in last week, before Col. W. Langton Coke, M.Inst.C.E., an inspector of the Local Government Board, on the application by the Barrow Rural District Council, for sanction to the construction of a sewerage and sewage disposal in Barrow-on-Soar. Mr. W. H. Simpson, the engineer of the scheme, explained the proposals.

At Ilfracombe, on Thursday in last week, a Local Government Board inquiry was held concerning the council's application to borrow £2,930 for the extension of the sanatorium.

The local building trades at Newcastle and Gateshead are said to be busier than they have been for many years. On the other hand, a rather slack and falling off are reported from the Rochdale district.

The new police-station and lock-up at Berwick-on-Tweed, which have been in course of erection for two years, were formally opened by the mayor on Tuesday. The cost of the new building was estimated at £1,945, but this is exclusive of the value of the site in Chant-street, furnishings, &c. The total outlay for the building has been about £8,000.

The North Darley Urban District Council have instructed Mr. Harry W. Taylor, A.M.I.C.E., of Newcastle-on-Tyne and Birmingham, to prepare a scheme of sewerage and sewage disposal for their district.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter should be addressed to the EDITOR of the BUILDING NEWS, Clement's House, Clement's Inn Passage, Strand, W.C., and not to members of the staff by name. Delay is not unfrequently otherwise caused. All drawings and other communications sent to contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsent contributions.

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NOTICE.

Bound copies of Vol. LXXIX are now ready, and should be ordered early (price 12s. each, by post 12s. 10d.), as only a limited number are done up. A few bound volumes of Vols. XXXIX, XL, XLIV, XLV, XLIX, LI, LIII, LVII, LXI, LXII, LXIII, LXV, LXVI, LXVII, LXVIII, LXIX, LXXI, LXXII, LXXIII, LXXIV, LXXV, LXXVI, and LXXVII may still be obtained at the same price; all the other bound volumes are out of print. Most of the back numbers of former volumes are, however, to be had singly. Subscribers requiring any back numbers to complete volume just ended should order at once, as many of them soon run out of print.

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Advertisements for the current week must reach the office not later than 3 p.m. on Thursday. Front-page Advertisements and alterations in serial advertisements must reach the office by Tuesday morning to secure insertion.

SITUATIONS.

The charge for advertisements for "Situations Vacant" or "Situations Wanted" is ONE SHILLING for TWENTY-FOUR WORDS, and SIXPENCE for every eight words after. *Advertisements must be prepaid.*

RECEIVED.—F. H.—S. W. P.—E. M. and Co.—J. O. S.—A. M. L.—M. D. N.

LEADS. We are doubtful if you have any remedy. We think the sanitary authority can compel you to drain separately; but you can try the question, if they summon you, if you think it worth while.

M. AND M.—The following illustrations of theological colleges have appeared in recent issues of the BUILDING NEWS: Bournemouth, St. Andrew, June 15, 1900; Cambridge (Presbyterian), July 30 and Aug. 6, 1897; Scarborough (Wesleyan), Aug. 12, 1898.

"BUILDING NEWS" DESIGNING CLUB.

DRAWINGS RECEIVED: "Joy," "Tilly," "Grecian," "Robin Hood," "The Kid," "Perseverance," "1901," "Pencil Point," "Gow Chrom," "Lisca," "Corinium," "Carlo," "Torus," "Trotter," "Thums," "Tentavi," "Day," "Bentley."

Intercommunication.

QUESTIONS.

[11723].—**Dancing Floor.**—Which is the best way to construct a floor of a large hall to be used upon occasions for dancing? Some advocate rubber strips under the timbers. Has this system proved a success? If so, where are the strips usually placed? Are there any drawbacks to this mode of construction proved by actual experience?—S. A.

[11724].—**Land Surveying.**—Which is the best book obtainable on land surveying, and one that will explain the processes of ordinary building surveying, taking angles, offsets, levels, &c.? Any reply from your experienced readers will oblige—W. C. C. C.

[11725].—**Church Seats.**—Will an obliging authority on church fitting give me the right width between the backs, width of seat, height of seat from floor, and proper

shape of backs of church seats? I see the dimensions vary in different new churches, and I want to know the distances approved of?—S. A. K.

[11726].—**Pavement.**—In laying tile-paving in lobby, is it necessary to fill-in between the joists with concrete, or will rough boards be sufficient? A reply will oblige.—INDEPENDENT.

[11727].—**Stained and Painted Glass.**—I shall be glad to know of any treatise on stained-glass windows. What is the difference between stained and painted glass, and which is the best to use?—L.

REPLIES.

[11713].—**Substitute for Plaster.**—Could not do better than make use of fibrous plaster in the form of slabs. The outside buildings at Earl's Court are, I believe, all built of this material.—G. W. B.

CHIPS.

The new Victoria Park at Galashiels has been formally opened. The park, which was purchased at a cost of £1,400, meets the demand for a recreation ground for the west end of the town, and commemorates the Diamond Jubilee of Queen Victoria.

The estimate of Messrs. Goodall, Lamb, and Heighway, of Manchester, for the fitting of the Bury Art Gallery at £799 has been accepted. Messrs. Woodhouse and Willoughby are the architects.

Mr. J. G. Talbot, M.P., opened, on Monday, new science buildings which have been erected in connection with Queen Elizabeth's School, Cranbrook, in Kent. The buildings, containing laboratories and lecture theatres, have cost £1,000.

Owing to subsidence caused by mining operations, Lord Zetland's residence, Upleatham Hall, is being razed to the ground. The principal wall of the peach-house has been pulled down, necessitating the destruction of 300 young peaches and over a million vegetable plants. The gardens have been opened as a public resort.

New infant schools for All Saints' parish, Bothen, Stoke-on-Trent, were opened on Thursday in last week. They accommodate 250 children, and cost £1,000. Messrs. Lynam, Beckett, and Lynam, of Stoke, were the architects, and Mr. L. Price was the contractor.

The death occurred in Paris on Sunday of M. Ernest de Sarzec, the archaeologist. Born in 1836, he was Vice-Consul at Massowah from 1872 to 1875, and afterwards at Basra. Encouraged by M. Waddington, Minister of Foreign Affairs, and by the Louvre Curators, he carried on excavations, with his wife's assistance, at Tello, which threw much light on Chaldean history and enriched the Louvre with a valuable collection.

On Saturday afternoon, at Winnington, Sir John Brunner and Dr. Mond opened the pavilion and club which is their gift to the workmen, in commemoration of the great chemical firm's 25th anniversary. The building cost £10,000, including baths, library, concert-hall, and billiard-rooms, and completes the recreation-hall.

The memorial window to the late Mr. John Broady, in the parish church of Stoke-on-Trent, was dedicated on Thursday in last week by the Bishop of Shrewsbury. The centre panel represents Christ in the Temple blessing Little Children. The east panel has for its subject the Last Supper, and the west panel treats of the Labourer in the Vineyard.

At Morecambe on Wednesday week the foundation-stone of a new Congregational church was laid. The church will cost about £2,000, and there will be seating accommodation for 350 persons. The site is in Sefton-road, Sandylands.

A Local Government Board inquiry was held before Mr. R. H. Bicknell, M.I.C.E., at the Audit House, Southampton, on Wednesday, to consider an application by the town council for a modification of their scheme for providing housing accommodation for the working classes.

The mission church of St. Anne, Greenbank, Bristol, was dedicated on Saturday. The building, which will eventually become the parish-room, is a rectangular apartment built of red Pennant, with freestone dressings, in the Early Gothic style. Internally its masonry is pointed instead of being covered with plaster, and its varnished pine roof is open to the ridge timber. The windows are filled with cathedral glass, and the floor laid with wood blocks in herring-bone pattern. The room will accommodate 400 persons, and has a vestry attached to it. The designs were by Mr. G. H. Oatley, of Bristol, and Mr. G. Humphreys, of the same city, was the contractor.

Sir William Lee-Warner, the late Resident of Mysore, has put in a curious plea against irrigation in India. Its wide extension, he states, means an increase of population, and a corresponding increase of responsibility to an already overburdened Government.

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ILLUSTRATIONS.

EMPIRE CLUB, DOVER STREET, LANCASTER CO-OPERATIVE SOCIETY'S NEW PREMISES—CHESTER CATHEDRAL CHOIR STALLS, THE CROFT, NEWARK—ST. GABRIEL'S PARISH HOUSE, LIMEHOLM, ART FOLIAGE.

Our Illustrations.

EMPIRE CLUB, DOVER STREET, LANCASTER, W. This new clubhouse, shown by a double-page perspective, is being carried out from the designs of Messrs. J. T. Wingfield and Arber.

NEW BUSINESS PREMISES FOR THE LANCASTER AND SKIRTON CO-OPERATIVE SOCIETY, LTD.

These premises, now in process of erection, occupy the site of the old shops, which have been pulled down. The front line is set back in New-street, so as to widen the thoroughfare. In the basement are stores for the various departments, and the heating and dynamo chambers. On the ground floor, commencing from the right, are the grocers', confectioners', butchers', and (at the angle) drapers' departments. Next to this is a cartway entrance into a covered yard, with unloading platforms and electric hoist. The remaining shops are for boots and shoes and furniture, the left frontage being completed by the entrance to a large existing hall, which has been incor-porated with these buildings. Large furniture stores are obtained under the hall, approached from the covered yard, into which also opens a secondary staircase from the hall and first floor. On the first floor are grocery stores and drapery show and fitting rooms, the counting-house, secretary's office, committee room, lavatories, &c. Lavatories are also devised in mezzanine floors off each staircase. On the second floor are work-rooms and women's dining-room, draper's stock room, library, and meeting-room and waiting-rooms and lavatories. Large book stores are in the attics above the library and meeting-room. The buildings are of local stone, with bases of Shap granite, the roofs covered with Westmore-land green slates. The work is being carried out by Messrs. J. Hatch and Sons, of Lancaster. Messrs. Austin and Paley are the architects.

CHESTER CATHEDRAL CHOIR STALLS.

In our issue of March 15th last we gave a double-page illustration of these beautiful choir-stalls in Chester Cathedral, from the drawings in pencil by Mr. James McLachlan, who was deservedly awarded the Pugin Travelling Studentship for 1900. To-day we give a second sheet by Mr. McLachlan showing details of the same stalls, including two richly-carved bench-ends and a quaint miserere, containing as subject a crowned king listening to two bearded eagles, and sup-ported by nondescript creatures, one of which has the forepart of an eagle; the other suggests a hornbill, a bird absolutely unknown to the 15th-century craftsman who carved this seat.

THE CROFT, NEWARK-ON-TRENT.

THE CROFT, Newark-on-Trent, has recently been erected for Mr. W. B. B. Quibell, from drawings by Messrs. Brewell and Bully, architects, of Nottingham and Newark, and the work has been

carried out by Mr. William Smith, builder, Newark. The house consists of a spacious parlour, entrance-hall, with cloak-room and lavatories, &c., morning-room, dining-room, living-room, with convenient kitchen offices, all of which are on the ground floor. On the first and second floors are billiard-room, seven bedrooms, two bath-rooms, linen and box-rooms, &c. The whole of the premises have been fitted up with a self-contained electric-light plant. All of the rooms, hall, corridors, &c., have been heated with hot water. The exterior of the house is constructed of red brick, and the upper portion of tile-hanging and half-timber, the roof being covered with red tiles.

PARISH HOUSE FOR ST. GABRIEL'S, WARWICK SQUARE, S.W.

This building, illustrated from the perspective now at the Royal Academy Exhibition, has been erected on a site given by the late Duke of Westminster in Glasgow-terrace, Lupus-street. In the half-basement are the club-rooms, kitchen, &c., and on the ground floor a hall for meetings and other rooms for parochial purposes. On the upper floor are rooms for the staff. Economy in cost of erection and in the subsequent management has had to be care-fully considered. The external facings of the walls are of stock bricks, with brindled brick bands and dressings. A little stone is used in the entrance doorways. The roofs are tiled. Messrs. W. King and Son, of Vauxhall Bridge-road, were the contractors. The architect is Mr. W. Campbell Jones, of Bedford-row, W.C. The building was opened yesterday Thursday by the Duke of Westminster.

ART FOLIAGE: NEW SERIES.

Drawing No. 1., a Wood Panel carved in oak: a natural treatment with lizard. The leaves repre-sent the front and backs of the leaves, and the moulding of their surfaces is gentle and flowing. The ground should be deeply recessed, and suffi-cient to give good shadow to the foliage. Drawing No. 11., Stone Finial and Crockets in the Early French Gothic manner. If the finial is placed at a great height above the eye, it is important that it should be made much higher in proportion, to allow for the foreshortening as seen from below. This is seldom sufficiently attended to.

J. K. COLLING.

PROFESSIONAL AND TRADE SOCIETIES.

DESIGN AND ENTER ARCHITECTURAL SOCIETY. —The annual meeting of this society was held in Plymouth on Saturday, the President, Mr. C. J. Tait, A.R.I.B.A., of Exeter, taking the chair. Among those present were Messrs. C. King, M. A. Bazeley, E. Coath Adams, B. Priestley Shires, A. E. Lethbridge, C.C., A. S. Parker, G. C. Murray, R. A. Mill, H. G. Luff, Har-bottle Reed (hon. secretary), Edmund Sedding, Harold Watts, O. Ralling (hon. treasurer), A. Heath, Sidney Griffin, and W. W. Hitchens. The hon. secretary read the annual report. A balance in hand of £21 was reported by the hon. treasurer, and the financial statement being adopted, it was decided to recommend the council to vote a sum of money in aid of the library of the Plymouth branch. The President, in his address, dealt with the progress made in archi-tecture, science, literature, and art during the Victorian period just closed. It behoved every architect to cultivate a catholicity of taste. His appreciative powers would be quickened, and he would find his life in all respects both fuller and broader. He might be told that specialism was more remunerative; but the age was not without signs that specialism and cranks in general had enjoyed their most profitable period, and that it was not so patient of the formalist and the pedant as it used to be. After a reference to the Strand improvement scheme, the President said another competition, and one of national importance, at present occupied the public interest—the pro-posed memorial to the late Queen. It appeared to be generally regretted that the endeavour had not been put upon broader lines. The least defensible part of it was undoubtedly the placing of whatever sculpture should be employed in the hands of a single sculptor. A hearty vote of thanks was accorded the President for his address, on the motion of Mr. C. King, seconded by Mr. Ralling, and supported by Mr. B. Priestley Shires. Mr. Harbottle Reed proposed Mr. H. G. Luff as the President for the coming year: Mr.

Tait seconded. Mr. M. A. Bazeley supported, and this was unanimously carried. Mr. J. Tait, by letter, was the vice-president, and Messrs. Harbottle Reed and O. Ralling were re-elected hon. secretary and hon. treasurer respectively, on the motion of Mr. Lethbridge, seconded by Mr. C. King. Vacancies on the council were filled by Messrs. M. A. Bazeley, C. Coath Adams, and W. W. Hitchens.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

At the meeting on Monday of the Institute of Architects, the President, Mr. William Emerson, in the chair, the following were declared elected on the Council 1901-1902:—President, *William Emerson; hon. secretary, *Alexander Graham, F.S.A. Vice-presidents: *John Belcher, A.R.A., Thomas Edward Colcutt, and *John Slater, B.A. (one vacancy still unfilled owing to decease of Mr. J. M. Brydson. Members of Council 18. *Frank Thomas Baggallay, *George Frederick Bodley, A.R.A., F.S.A., *William Douglas Caroe, M.A., F.S.A., *William Milner Fawcett, M.A., F.S.A. past Vice-president (Cambridge), Ernest George, past Vice-president, *John Alfred Gotch, F.S.A. (Kettering), George Enoch Grayson (Liverpool), Edward Augustus Gruning, past Vice-president, *Edwin Thomas Hall, *Henry Thomas Hare, *Edward William Mountford, *Professor Beresford Pite, George Halford Fellowes Prynne, Percival Gordon Smith, *Leonard Stokes, *Richard Phené Spiers, F.S.A., *Paul Waterhouse, M.A., and *Aston Webb, A.R.A., F.S.A., past Vice-president (seven unsuccessful candidates). Associate-Mem-bers of Council (4): *Robert Skeleton Balfour, William Henry Bidlake, M.A. Cantab (Bir-mingham), James Sivewright Gibson, and Henry Vaughan Lanchester (three unsuccessful candi-dates). Representatives of allied societies: John James Burnet, A.R.S.A. (Glasgow Institute of Architects), Frank Caws (Northern Architectural Association), Charles Henry Channon (York Architectural Society), Arthur Clyne (Aberdeen Society of Architects), *Sir Thomas Drew, P.R.H.A. (Royal Institute of the Architects of Ireland), *Francis Haslam Oldham (Manchester Society of Architects), *Samuel Perkins Pick (Leicester and Leicestershire Society of Archi-tects), *Frank William Wills (Bristol Society of Architects), and Butler Wilson (Leeds and Yorkshire Architectural Society). Representa-tive of the Architectural Association (London): *William Howard Seth-Smith (Fellow). [An asterisk (*) denotes re-election. Three members of the retiring Council—Messrs. Thomas Blashill, James Brooks, and H. H. Statham—did not seek re-election, and a fourth, Mr. T. E. Colcutt, has been elected a Vice-president.]

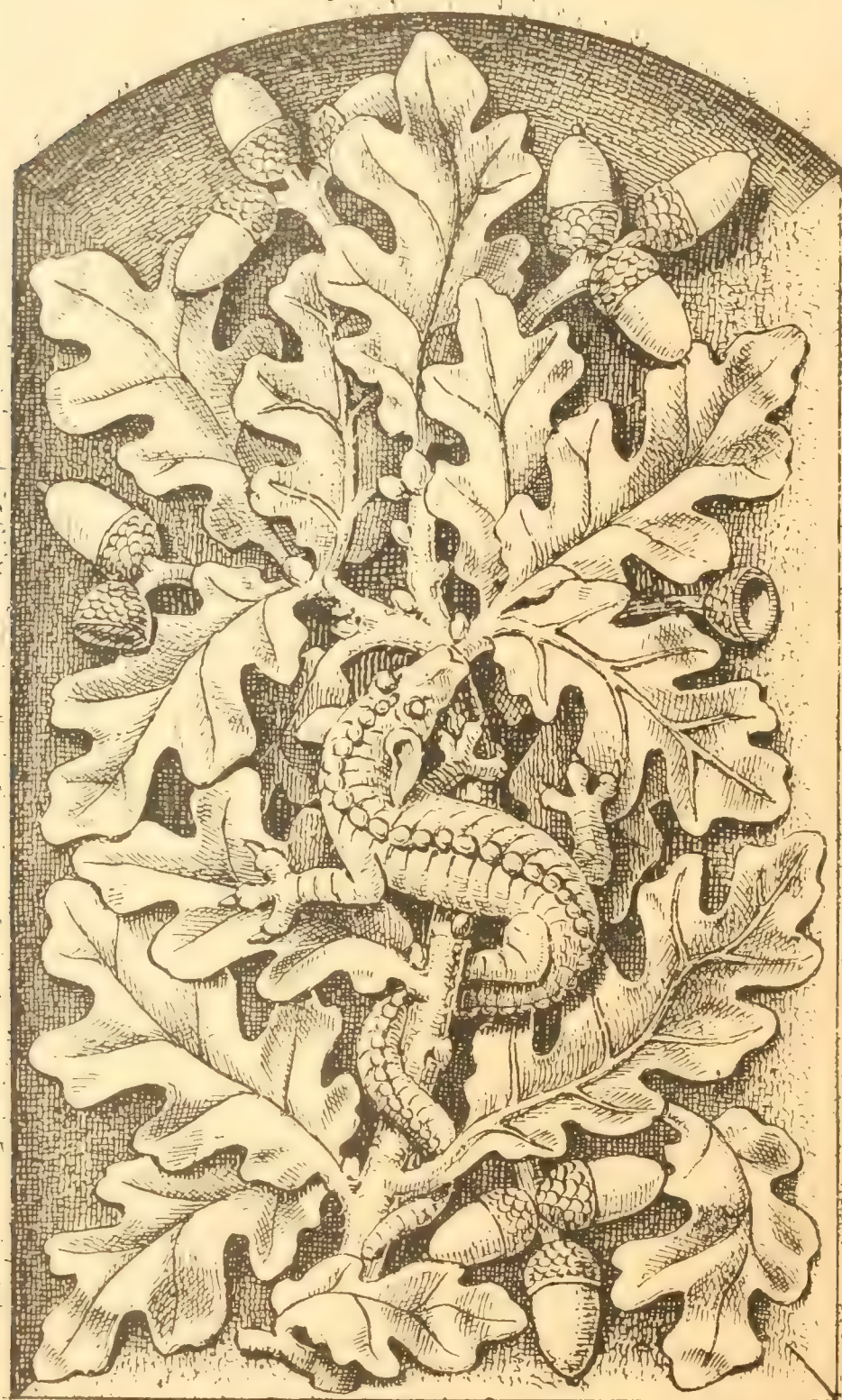
The new Orphenage, Bonthewyld, Cumbria, is being warmed and ventilated by means of Shorland's patent Manchester grates, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

The new edition of the Directory of the Engineers and Iron and Metal Trades, issued by Kelly's Directories, Ltd., is as up to date and indispensable as ever. No possible care has been spared by the compilers, and the result is an approximation to perfection which we believe is unsurpassable.

At the town-hall, Warminster, on Friday, Mr. W. E. O. Meade-King, Local Government Board inspector, held an inquiry as to the application by the urban district council to the Local Government Board for sanction to borrow £1,600 for works of sewerage and sewage disposal, £1,200 for purposes of technical instruction, and £600 for works of water supply at Crookerton. No opposition was offered to either of the proposals.

The new Midland Grand Hotel at Manchester is now progressing rapidly, the architect to the com-pany (Mr. Trubshaw) having finally determined the construction after visiting all the great cities of Europe and America. Special attention has been given to the fireproofing of the floors, &c., the merits of all systems were considered, and the "Fawcett" ultimately selected to be carried out by Messrs. Mark Fawcett and Co., of Westminster.

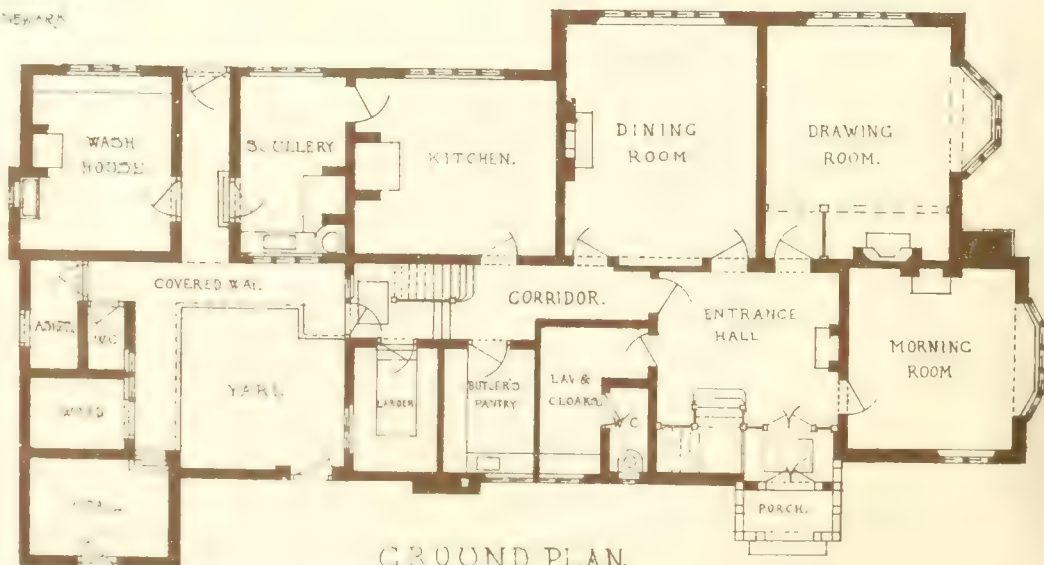
An appeal has been made this week by the vicar of St. John's, Walworth, to preserve as an open space the 15 acres of ground surrounding Bethlem Hospital, which it was alleged was about to be removed into the country: but Mr. John Brewer, the clerk to the hospital, states that the report is entirely unfounded, and the "proposed migration" a revelation to the governors. The rumour doubt-less arose from the fact a Bill is being promoted this session by the governors seeking to have con-trolled on their extended powers with regard to the leasing of lands—not necessarily those adjoining the hospital—for building purposes.



K



THE ROFT NODDY.
 BY WILLIAM EDDY.
 BRISTOL & SAN. ARCHT.
 14, ST. MARK'S, NEWARK.



GROUND PLAN.

SCALE OF FEET. 0 1 2 3 4 5 6 7 8 9 10

THE UNIVERSITY PRESS, June 7, 1907

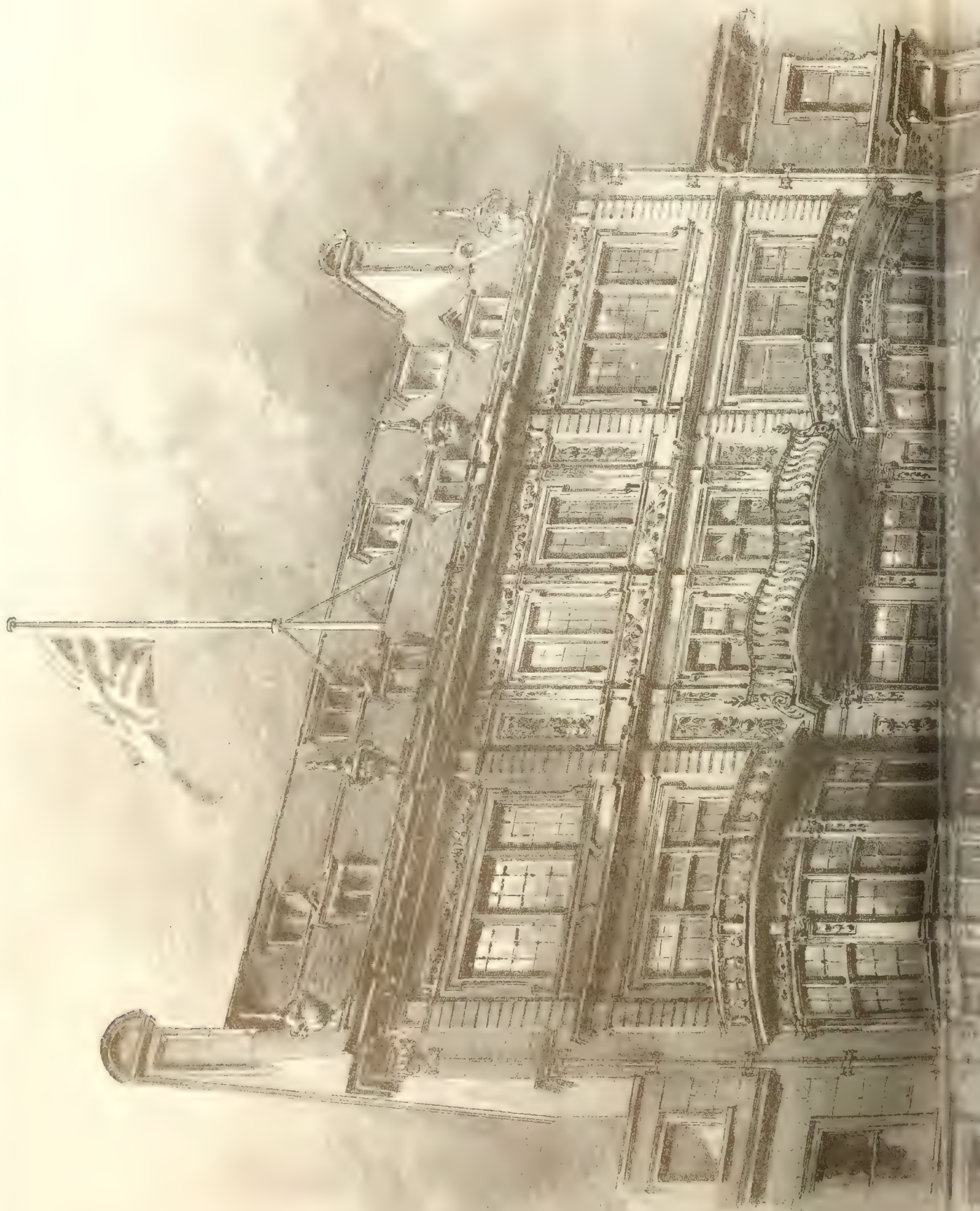




PHOTO TINT

THE EMPRESS CLUB, DOVER STREET, PICCADILLY, W.

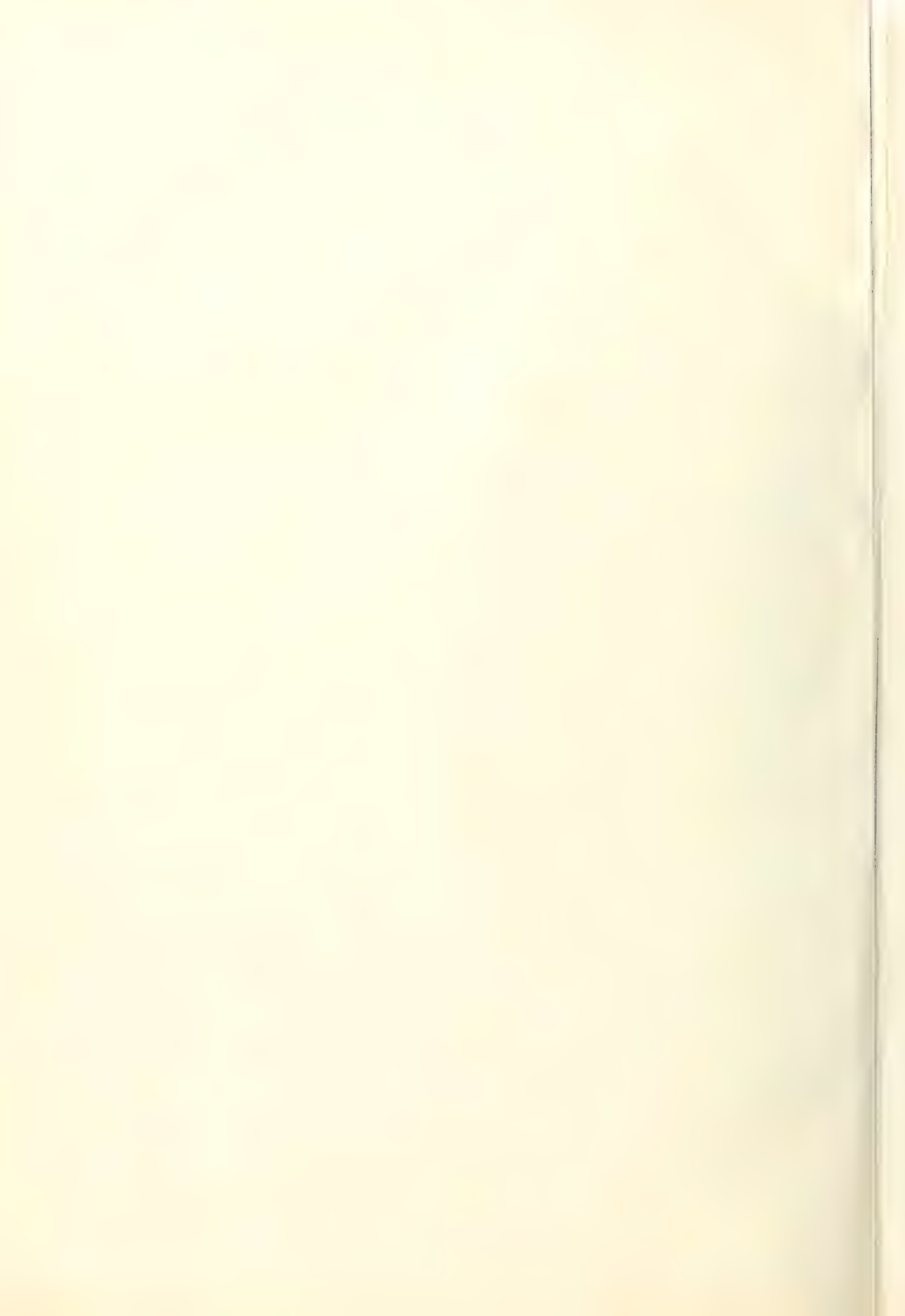
J. T. WIMPERIS & ARBER, ARCHTTS.



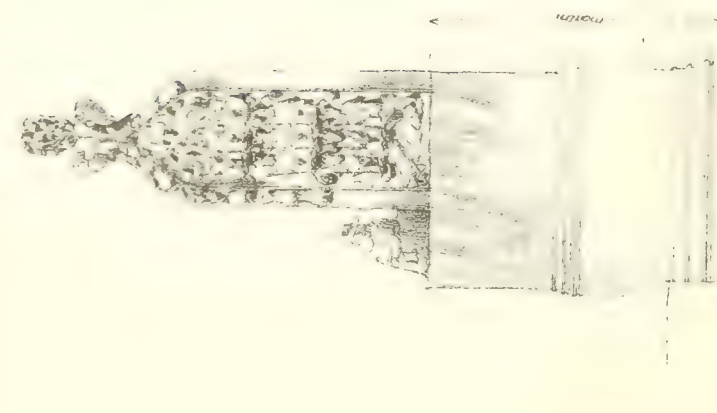
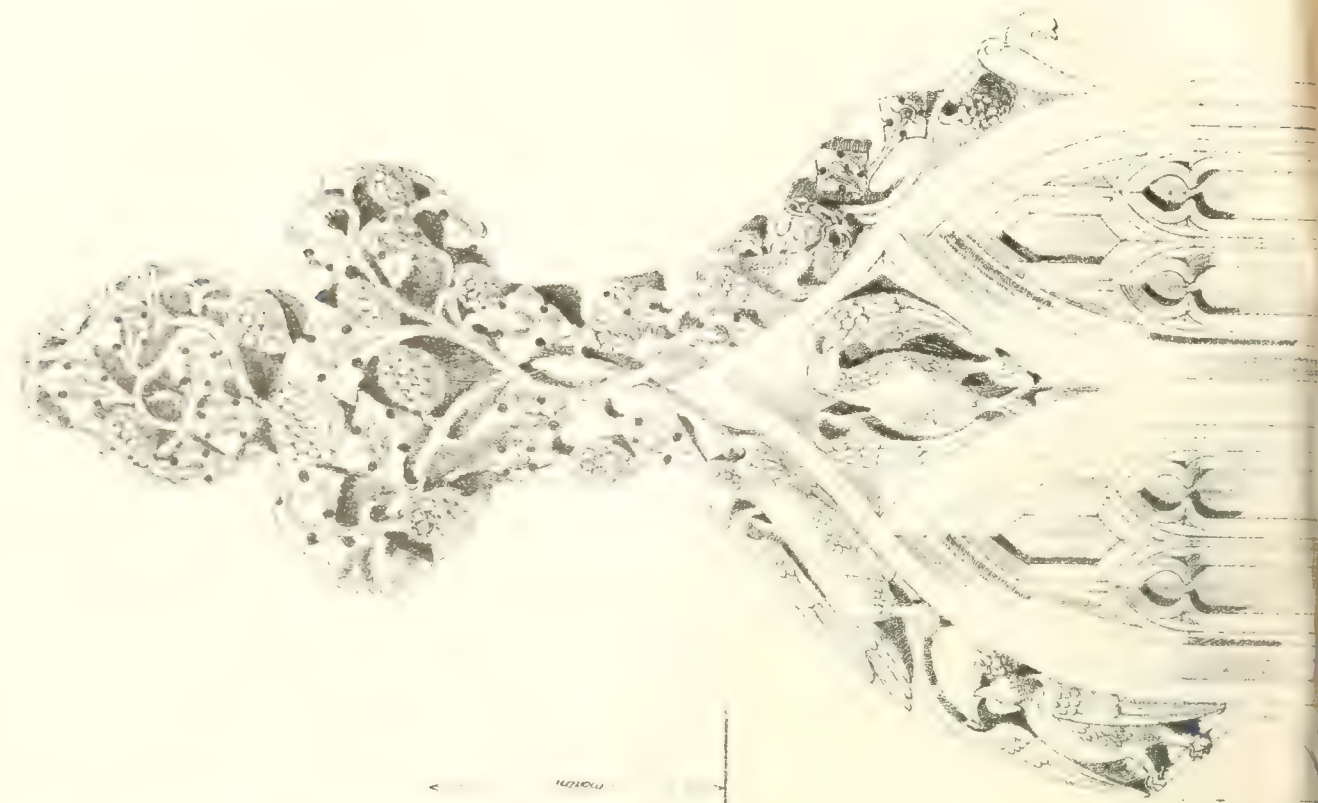


BUSINESS PREMISES FOR THE LANCASHIRE

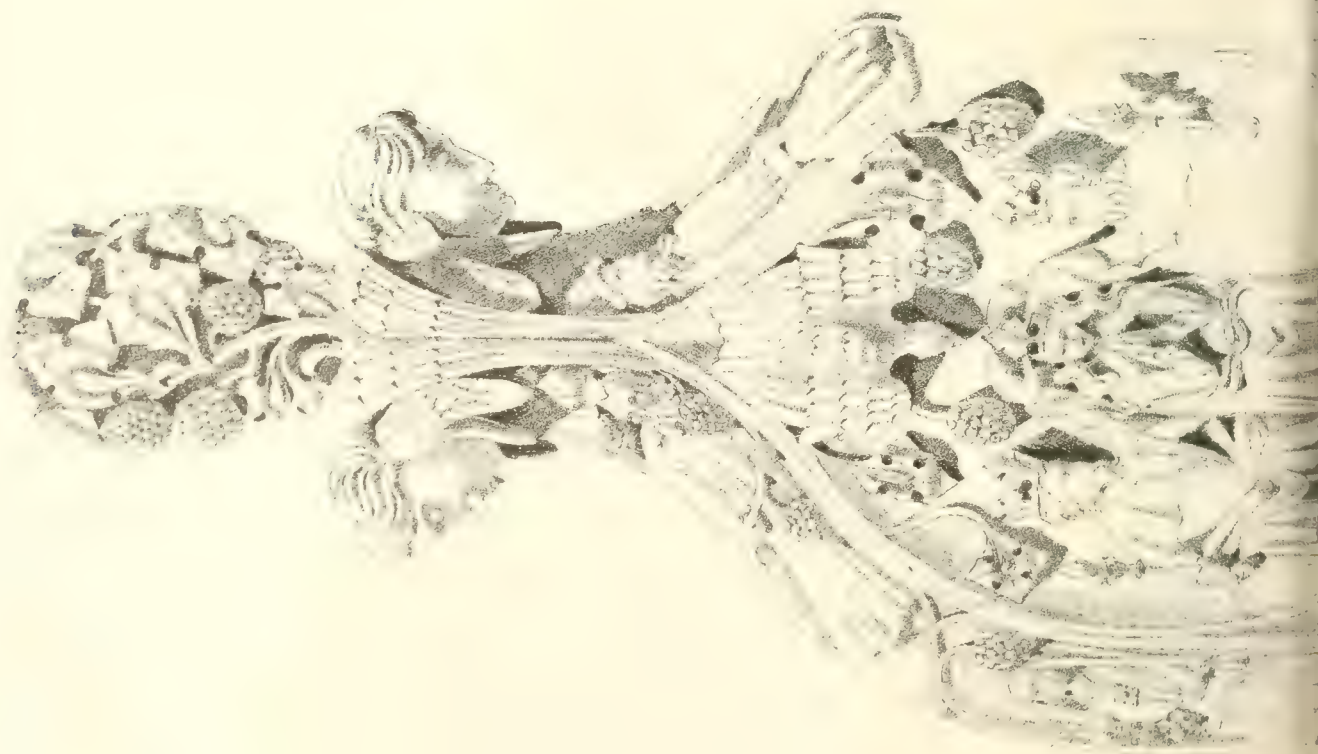








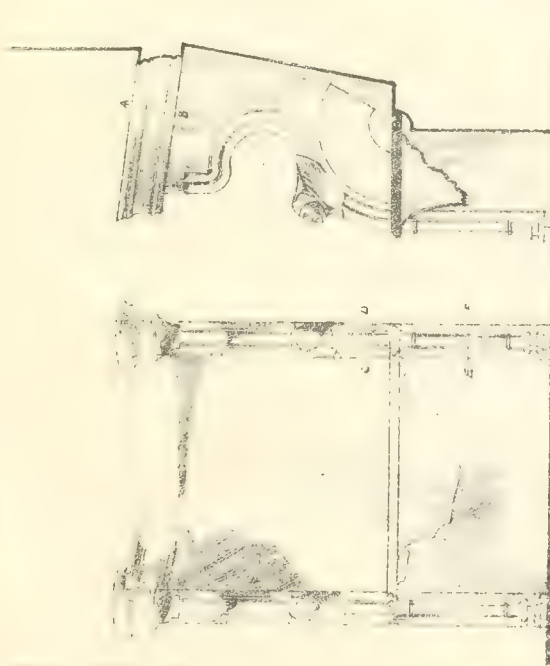
SKETCH ELEVATION



CHESTER CATHEDRAL CHOIR STALLS. DETAILS OF MISERERE ENDS.

FOUR TRAVELLING STUDENTS' DRAWINGS BY JAMES Mc LACHLAN.

MISERERE



Stalls

Stalls

3-40



Stalls

Stalls

Stalls

Stalls

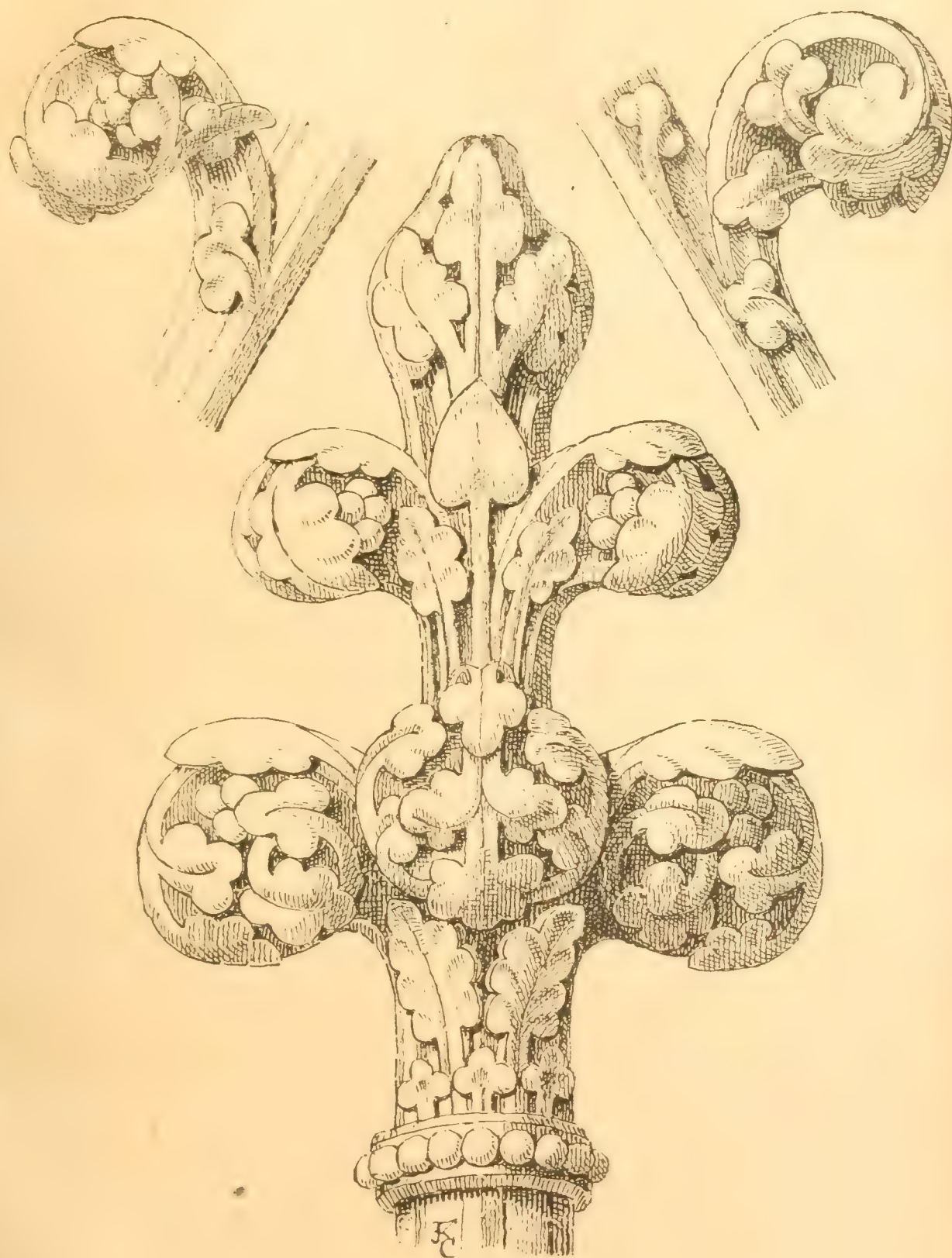
Stalls

Plates

CHESTER CATHEDRAL.
CHOIR STALLS.



St. Gabriel's Parish House, Boston, 1870. Photo-Tint.



Our Office Table.

THE annual report of the City Engineer (Mr.

FIVE hundred and forty-one designs for the new postage stamps of Switzerland were sent into Berne recently. There was no design good enough for the first prize, and the second, £28, was awarded to M. L'Eplattenier for his sketch representing William Tell brandishing a putty-knife destined for the invisible villain, while his son clings to him, and holds out the inevitable apple which has been pierced by his father's arrow. In fact, the liberty-loving Swiss has here all the elements of a condensed tragedy for the sum of ten centimes.

BURGH SEWERAGE, DRAINAGE, AND WATER SUPPLY (SCOTLAND) BILL. A Bill to amend the law in regard to the sewerage and drainage and water supply of burghs in Scotland has been brought in by the Lord Advocate, the Solicitor-General for Scotland, and Mr. Anstruther. It provides for security for sums borrowed for sewers, &c., under the Public Health Act, and for special sewer and water assessments. All town councils are to have the powers which are conferred by the Public Health (Scotland) Act, 1897, upon local authorities other than burghs.

ST. ANDREWS WATER SUPPLY.—The scheme for augmenting the water supply of the city, which was commenced two years ago, has now been completed, the last pipe of the new 10in. main having been laid on Saturday. Prior to this year there was only storage capacity for a reserve of water to tide over the season of three million gallons, but a new reservoir has been constructed in Langraw Den, which will augment the storage water to seventeen millions of gallons, thus being sufficient, along with the dry weather flow of the various streams, to provide 40 gallons per head of the population daily throughout the whole of the summer months. New filters have also been built at an elevation of 70ft. higher than the filters previously in use, and this will give a much-needed additional pressure to the higher parts of the city. The engineers were Messrs. Belfrage and Cairnes, Edinburgh.

The parish church of Pkington, Suffolk, is about to be internally restored at a cost of from £500 to £600, from a grant by Mr. T. T. Cook, of Walsingham.

LATEST PRICES.

The most extensive Stock of every kind of
Wood in Planks and Boards, dry and fit for
immediate use.

LIST OF COMPETITIONS OPEN.

W. H. GRAYSON, TOWN SURVEYOR, TOWN HALL, BARNUM

June 8

John Downlight, Clerk, Emms District Lunatic Asylum, Co. Clare ..	10
W. L. Martin, Clerk, Town-street, Fallowbridge ..	24
John Park, City Engineer, Belper ..	30
John Downlight, Clerk, Town Hall, Muncheston ..	July 31
James Lawley, 59, Market-street, Farnham ..	Aug. 1
John Blackley, Barbridge-road, Huddley ..	—

LIST OF TENDERS OPEN.

BUILDINGS.

Edinburgh—Foundation Work of County Buildings	Edinburgh District Council	W. H. Hill and Son, Architects, 28, South Mall, Cork	June 8
Barking—Lodge, &c., Longbridge-road Recreation Ground	Urban District Council	W. B. Purser, A.M.I.C.E., County Sur., 4, Worthing-rd., Horsham	8
Port Glasgow—Slaughter House, &c.	Yeady-bolwg School Board	Charles G. Smith, Factor, Aberdeen	8
Drycote, Derby—Isolation Hospital	Corporation	W. W. Turner, Clerk, Tewkesbury	8
Leytonstone—Workhouse Mortuary	School Board	Chas. E. Butler, Architect, 14, Queen-street, Colchester	8
Buncrana—Two Houses, Castle Avenue	Town Council	A. King, Works Manager, Llanak	8
Lampeter—Boys' School (172 children)	Great Western Railway Co.	J. T. Foster, 32, Queen-street, Halifax	8
Milltown of Lesmoir, Rhynie—Reroofing Farm Offices	Committee	J. Donnelly, Architect, Omagh	8
Killarney—Additions, District Lunatic Asylum	West Ham Union Guardians	Donald and Tate, Architects, 14, John-street, Warrington	8
Southminster—Police Station	Patrick Campbell	Joseph Shepherdson, Architect, 14, Middle-street South, Driffield	8
Hebden Bridge, Halifax—Sub-Station	School Board	Guthrie and Jones, M.M.S.A., Architects, 1, Tony-audy	8
Leeds—Excavation for Police Station	School Board	Percy H. Curry, Architect, Market-place, Derby	8
Chiswick—Double-fronted House, Cranbrook-road	Essex County Council	F. Mansel Franklin, Clerk, West-gate-street, Cardiff	8
Widened, &c., Mill Barn	Tramways and Electricity Committee	F. C. Ruddle, Architect, Union Offices, Cardwell-place, Blackburn	10
Widened, &c., Mill Barn	Watch Committee	W. H. Hill and Son, Architects, 28, South Mall, Cork	10
Widened, &c., Mill Barn	Rural District Council	Macintyre Henry, Architect, 7, South Charlotte-street, Edinburgh	10
Widened, &c., Mill Barn	W. S. Fairbairn	R. W. Pratt, Architect, Town and County Bank Buildings, Elgin	10
Widened, &c., Mill Barn	Bell and Co., Ltd., Stockport ..	C. F. Dawson, Surveyor, Public Offices, Barking, Essex	10
Widened, &c., Mill Barn	Grace and Hayes	Hornsey and Monkman, Architects, 10, Railway-street, York	10
Widened, &c., Mill Barn	Celbridge Rural District Council ..	Jacob Rees, Architect, Hillside Cottage, Pentre	10
Widened, &c., Mill Barn	Proprietor Committee	W. C. Oliver, Architect, Barnstable	10
Widened, &c., Mill Barn	Knapp, Drewett, and Sons, Ltd.	A. H. Collingwood, Town Clerk, Carlisle	10
Widened, &c., Mill Barn	Guardians	James Barber, Architect, Dumfries	10
Widened, &c., Mill Barn	Southall-Norwood Burial Board ..	C. S. Nelson, Architect, Sun Buildings, 15, Park-row, Leeds	10
Widened, &c., Mill Barn	Parish Council	Stewart, Tough, & Alexander, Architects, 2, Hamilton-street, Greenock	10
Widened, &c., Mill Barn	H. P. Tyler	G. K. Mills, Secretary, Radington Station, W.	10
Widened, &c., Mill Barn	Parish Council	F. S. Antliff, Architect, Draycott	10
Widened, &c., Mill Barn	Parish Council	H. Williams, 2, Chapel-rd., Holyhead	10
Widened, &c., Mill Barn	Parish Council	The Factor's Office, Huntly, N.B.	10
Widened, &c., Mill Barn	Parish Council	J. W. Dunford, 106, Queen Victoria-street, E.C.	10
Widened, &c., Mill Barn	Parish Council	The Factor's Office, Huntly, N.B.	10
Widened, &c., Mill Barn	Parish Council	Richard C. Merson, Architect, Hollybank, Yelverton	10
Widened, &c., Mill Barn	Parish Council	T. Johnston, Architect, 11, East Wall, Londonderry	10
Widened, &c., Mill Barn	Parish Council	The Factor's Office, Huntly, N.B.	10
Widened, &c., Mill Barn	Parish Council	L. Banks Price, Architect, Lampeter	10
Widened, &c., Mill Barn	Parish Council	The Factor's Office, Huntly, N.B.	10
Widened, &c., Mill Barn	Parish Council	Arthur Pells, F.S.I., Architect, London-road, Beccles	10
Widened, &c., Mill Barn	Parish Council	J. F. Fuller, F.S.A., Architect, Brunswick Chambers, Dublin	10
Widened, &c., Mill Barn	Parish Council	The Factor's Office, Huntly, N.B.	10
Widened, &c., Mill Barn	Parish Council	F. Whitmore, County Architect, Duke-street, Chelmsford	10
Widened, &c., Mill Barn	Parish Council	The Factor's Office, Huntly, N.B.	10
Widened, &c., Mill Barn	Parish Council	James Lord, C.E., Borough Engineer, Town Hall, Halifax	10
Widened, &c., Mill Barn	Parish Council	The Factor's Office, Huntly, N.B.	10
Widened, &c., Mill Barn	Parish Council	Reddon and Kitson, Architects, Greek-street Chambers, Leeds	10
Widened, &c., Mill Barn	Parish Council	The Factor's Office, Huntly, N.B.	10
Widened, &c., Mill Barn	Parish Council	F. and W. Stocker, Surveyors, 90-91, Queen-street, Cheapside, E.C.	10
Widened, &c., Mill Barn	Parish Council	Anthony Scott, C.E., 16, William-street, Drogheda	10
Widened, &c., Mill Barn	Parish Council	The Factor's Office, Huntly, N.B.	10
Widened, &c., Mill Barn	Parish Council	Jenkins and Marr, Architects, 16, Bridge-street, Aberdeen	10
Widened, &c., Mill Barn	Parish Council	The Factor's Office, Huntly, N.B.	10
Widened, &c., Mill Barn	Parish Council	John Hindmarsh, Surveyor, Stockport	10
Widened, &c., Mill Barn	Parish Council	The Factor's Office, Huntly, N.B.	10
Widened, &c., Mill Barn	Parish Council	H. J. Jones, M.S.A., Wellington Chambers, 12, Bridge-street, Bristol	10
Widened, &c., Mill Barn	Parish Council	James Whelan, Architect, Celbridge	10
Widened, &c., Mill Barn	Parish Council	Milnes and Finney, Architects, 99, Swan-square, Bradford	10
Widened, &c., Mill Barn	Parish Council	T. Cann Hughes, Town Clerk, Town Hall, Lancaster	10
Widened, &c., Mill Barn	Parish Council	William H. Hope, Architect, Hampton Wick	10
Widened, &c., Mill Barn	Parish Council	John Turcan, Wootton Fitzpaine Estate Office, Charnmouth	10
Widened, &c., Mill Barn	Parish Council	The Visiting Committee, Burial Board, Southall-Norwood	10
Widened, &c., Mill Barn	Parish Council	Thomson and Sandilands, Architects, 241, West George-street, Glasgow	10
Widened, &c., Mill Barn	Parish Council	F. H. Livesey, Architect, 107, Newgate-street, Bishop Auckland	10
Widened, &c., Mill Barn	Parish Council	D. Wickett, Galloway, Architect, 2, Market-street, Rocham	10
Widened, &c., Mill Barn	Parish Council	W. J. Jennings, Architects, 4, St. Margaret's-street, Canterbury	10
Widened, &c., Mill Barn	Parish Council	F. Brimley-Smith and Bennett, Architects, Glastonbury	10
Widened, &c., Mill Barn	Parish Council	The Rev. W. Sampson Davis, The Vicarage, Embleton	10
Widened, &c., Mill Barn	Parish Council	John Turcan, Wootton Fitzpaine Estate Office, Charnmouth	10
Widened, &c., Mill Barn	Parish Council	Harriet B. Smith, Architect, 11, Adelaide, Penre	10
Widened, &c., Mill Barn	Parish Council	The City Engineer, 1, Court Chambers, Glastonbury	10
Widened, &c., Mill Barn	Parish Council	J. Archer, Edwards, County Surveyor, Wakefield	10
Widened, &c., Mill Barn	Parish Council	J. W. W. Town Clerk, Warrington	10
Widened, &c., Mill Barn	Parish Council	T. E. Knightley, Architect, 106, Cannon-street, E.C.	10
Widened, &c., Mill Barn	Parish Council	The Engineer, Gas Offices, Rotherham	10
Widened, &c., Mill Barn	Parish Council	Harrington and Ley, 65, Bishopsgate-street Without, E.C.	10
Widened, &c., Mill Barn	Parish Council	Jenkinson and White, 1, Princes-street, Westminster, S.W.	10
Widened, &c., Mill Barn	Parish Council	John O'Neill, Clerk, Board Room, North Brunswick-street, Dublin	10
Widened, &c., Mill Barn	Parish Council	Barrowcliff and Alcock, Architects, Mill-street, Loughborough	10
Widened, &c., Mill Barn	Parish Council	Thos. C. Golder, Borough Surveyor, 23, Queen-street, Deal	10
Widened, &c., Mill Barn	Parish Council	J. G. T. West, M.S.A., Architect, The Knoll, Abingdon	10
Widened, &c., Mill Barn	Parish Council	J. W. Cockill, A.R.I.B.A., Bond St., Town Hall, Great Yarmouth	10
Widened, &c., Mill Barn	Parish Council	G. E. T. Lawrence, A.R.I.B.A., 22, Buckingham-st., Adelphi, W.C.	10
Widened, &c., Mill Barn	Parish Council	Swash and Bain, Architects, Midland Bank Chambers, Newport	10
Widened, &c., Mill Barn	Parish Council	Hussey and Walcott, 1, Gray's Inn-place, W.C.	10
Widened, &c., Mill Barn	Parish Council	J. Y. McIntosh, Architect, Cornwallis-street, Barrow-in-Furness	10
Widened, &c., Mill Barn	Parish Council	Moulds and Porritt, Architects, 77, King-street, Manchester	10
Widened, &c., Mill Barn	Parish Council	F. W. Turner, Architect, West-gate, Glastonbury	10
Widened, &c., Mill Barn	Parish Council	The Secretary, Lombard-down Creamery, Co. Cork	10
Widened, &c., Mill Barn	Parish Council	A. Ainsworth Hunt, Archt., 51, Abbeygate-st., Bury St. Edmunds	10
Widened, &c., Mill Barn	Parish Council	J. Fisher, Brownlow-road, Ebbw Vale, S. Glos.	10
Widened, &c., Mill Barn	Parish Council	C. W. Sturt, F.S.I., Architect, Colchester	10
Widened, &c., Mill Barn	Parish Council	S. Knight and Parkinson, 175, Temple Chambers, Tudor-st., E.C.	10
Widened, &c., Mill Barn	Parish Council	Bland and Bown, Architects, North Park-road, Harrogate	10
Widened, &c., Mill Barn	Parish Council	Aslworth and Taylor, Builders, Malpas	10

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

VOL. LXXX.—No. 2423.

FRIDAY, JUNE 14, 1901.

ANALYSIS IN ARCHITECTURE.

ENGLISHMEN and all Anglo-Saxon races are adepts in taking things to pieces, in analysing and decomposing rather than in the contrary process of composing and combining; and it is therefore, perhaps, as a nation we are more mechanical than people of Southern parts, and that mechanical progress has been more evident amongst us than artistic compositions. We take to pieces and analyse our materials, our monuments and buildings, even our thoughts and emotions, and our very artistic perceptions have been analysed. No doubt this is a great achievement physically and mentally; but it has not produced a corresponding faculty of invention. Macaulay has said, truly, "Ages are spent in collecting materials, ages more in separating and combining them"; and we are engaged in the latter process. The poetical genius and architectural creativeness of the earlier ages prospered when people relied on their perceptive powers, when there was no attempt to philosophise, or to discover abstract terms; but we now have advanced beyond the stage of simple perception and particular images. We are not content with expressing our ideas in language: we now seek to discover its laws, to analyse sentences, to parse or to resolve a sentence into its elements or parts of speech; but before the days of grammar and the study of philology, men wrote better poetry and greater epics; and so it is in the formative arts. We now are content to analyse, and to abstract what in former ages was the natural evolution of men's requirements. In the application of this method to our architecture we have lost much in the art of composition.

The analytical study of buildings in the several aspects of style, construction, planning, and detail is one of the consequences of our present mode of viewing architecture. We now talk of style, of detail, and materials, planning, construction, types for different classes of building, and so on, as if all these things had to be separately considered in the design, whereas under the old system they were the natural manifestations and outgrowths of the buildings, and had no separate existence apart from them. A building is described as in such and such a style, its plan of the hall, or avenue, and mixed type; a corridor or pavilion plan, arranged according to some recognised system; that it is of stone, or brick, or terracotta, &c. This method, of course, has chiefly arisen from the break-up of ancient historical architecture and the disintegrating process that followed during the Renaissance, partly also from the separation of the artist from the craftsman. The effect on modern architecture is too well known to need recapitulating. Whether it is possible to recognise the disjointed elements and to bring them out of the chaotic state in which they have so long been into something like organic unity, is a question that is worth careful thought and consideration. The analytical method is so engrafted into our modern system of education and practice that it is hard to think of any other. What is a specification but an analysis of trades? a bill of quantities but an analysis of materials and labour? Owing to the modern method of contracting for buildings, the principle of analysis has become an important instrument in determining cost. Careful specifications and elaborate bills of quantities are necessary; the building, as it were, has to be taken to pieces, or dissected as much as possible, so much stone or brick, so much timber, so

much plaster and ironwork, &c., and the labours necessary. The fittings, also, are separately taken. All these separate items are considered simply as so many items of cost; their true relation to each other is quite another and secondary thought, even to the architect, when the actual building is considered. To the surveyor the analysis is important. The man who can take the work to pieces, who can dissect as much as possible his stonework, carpentry, and joinery, is the most successful; so the architect who can so to speak, disengage his mind and attention from his design as a whole, and can tell his client without difficulty what it would save to omit some material or item, or can give the cost of the building, omitting some portion of it, or in another material, must have an analytical mind. The ability to take to pieces, to separate, to resolve into parts, is a useful faculty to the professional man; but, unfortunately, it does not always follow that the faculty of separating and taking to pieces is the best for the designer or composer. As a rule, it is otherwise. To be good at analysis requires the exercise of discrimination and of retentiveness of memory, a very different habit to that necessary in composition.

To take another aspect of the subject. In the construction of buildings the same plan of studying parts and isolated facts is now in vogue. The student learns all about masonry and brickwork, carpentry and ironwork, from separate treatises, written or compiled by men who are not architects, and who have no concern with the design or relation of one to another, or to locality and climate. The practitioner makes himself acquainted with various kinds of bricks and stones and their qualities in the abstract; he learns the modes of converting and working them, quite irrespective of the local custom of working or whether they are fitted to a particular kind of building. He studies his roofs apart from their connection with the structure, simply as modes of covering or of resisting stress, and his knowledge of constructive ironwork is probably gathered from books, without reference to the design; each is considered separately. It will be seen on consideration that this was not the way the old architects learned. They had no books on independent branches of construction. Each building was designed and erected as a whole; its masonry, roof, and ironwork were designed as having a special relation to the structure, its requirements and locality. In this manner a sense of proportion between the several parts and trades was strictly observed. One did not see the walls of a building in a Northern stone locality built with brick and timber, or the style of architecture suitable in a hard stone or granite district adopted in the South; nor did they employ a roof designed for and adopted in one part of England in a building hundreds of miles away, which had no conditions in common. We would not, for example, have seen such a thing as an old church roof-truss copied and put over a modern swimming-bath or school-hall, or a Northamptonshire type of tower and spire transferred to a brick district, say in Sussex or Hampshire. According to the analytical mode of regarding constructive types, as applicable to any building, this plan is plausible. By breaking up the union that existed in the old building, the analytic student feels no scruple in employing any form of construction on any building, no matter how different in purpose, or wherever situated. To be honest and true, his analysis should go further. He should not be content with taking the outward form without an examination of the purpose of the building, the motive of the designer, and the materials and labour at hand; but these are factors that are ignored.

Specialism has increased the tendency of looking at things in parts. Take as an instance iron construction, or decoration.

The iron or steel work of a big building is given to a specialist in the trade. In the States it is usual to employ experts for designing special plants and factories. In the manufacture we see the analysis carried out more fully. Thus, certain members are prepared and drilled; the plates are then fitted together with rivets and bolts; other hands are engaged in fitting. But the point we wish to insist on is that the architect employs an expert to make the necessary drawings and specifications, and to carry out the work. No doubt accuracy and expert knowledge in this branch of construction are insured by this plan, to the advantage of the building in a mechanical sense; but it is not the way that appeals to the architect. We know how badly the building suffers sometimes from the engineering expert having his own way. Machinery also is another development of the analytical spirit; we see it mainly in large buildings like model dwellings, barracks, and workhouses, wherever there is a repetition of items: the turning out of many doors and sash-windows of the same pattern. Division into parts and multiplication of each part is the main consideration, so the design that is made on this principle is the one that lends itself more readily to easy and cheap execution.

The analytic spirit is quite as much seen in architectural composition and design as in construction. Our students are taught—as, for instance, in the Institute examinations—to define the characteristic mouldings and ornaments of each period of English architecture from A.D. 1000 to 1550, quite apart from the buildings or purposes these mouldings fulfilled; or, again, the student is required to make a sketch design in a certain style he selects—say that of a western end of a church—and to define the parts. The analysis of Classic forms, as well as of Gothic buildings, has entered into the courses given to students. Thus the analysis of Doric forms as we see them in a Greek temple is one of the lessons taught. The columns, their tapering form, entasis, fluting of shaft, and the abacus and echinus of the capital are all shown to have been derived from wooden models. The architraves represented the beams resting on the wooden supports; the triglyphs the ends of cross-beams over each column; so the metopes and guttæ or drops had a wooden original, while the cornice of the entablature represented the eaves of a timber roof. So, also, the thin bands between architrave and frieze were clearly derived from a carpenter's moulding. The study of mouldings as they occur both in Greek and Gothic buildings is taught now analytically, and treatises have been written, such as Paley's "Mouldings" and Brandon's "Analysis of Architecture," and Pugin's "Specimens," that show every feature of Gothic architecture has been studied separately on this system, and the method has been of great service in the critical study of the art. Our modern textbooks, for example, like Prof. Banister Fletcher's "Manual of Architecture," analyse the styles, the analysis being based on the essential parts of buildings. By this comparative and analytical method the student is directed to trace the evolution of each part, and to contrast and compare them. This critical spirit has had its value, because it has set students to compare the problem of each function of a building, and to arrive at certain principles; but it has not of itself done anything to help architects to compose. In natural history, and in sciences like anatomy, the comparative and analytic method has been of utmost service, but in architecture the method has perhaps been carried too far—that is to say, the student, while cramming his head with the anatomy of his art and with distinctions and comparisons, has neglected the more important subject of synthesis. Then, in practical design, we are apt to consider plans apart from the elevations and sections of the

simultaneously. In its place the mode was to study the plan, the elevation, and the section, each in its separate study, or, more commonly, we studied them all together, and then put them together. Now, however, they are one that suits us, and this is chosen whether it be a plan, an elevation, or a section, and other features. How can good composition be the result of thinking out or mapping out the plan, the elevation, and the section, as many distinct units. Analysis is opposed to grouping, and putting together piece by piece in our design, and it does not matter whether the pieces agree or not. A building designed on this principle has little coherence. We can take it apart, cut it up into sections, or decompose it into the elements of which it is made. But it would be not so easy to take away any part of a building designed on the opposite method without dismembering or injuring the whole. That we may take away portions of our modern buildings with improvement, or that we can add wings and additional features to them with impunity, is perhaps convenient, but is scarcely flattering. The architectural groupist is contented if he can piece on to his design bits from Montacute, Moreton, Burleigh, or Longleat, and these may be as easily removed as added without detriment to the whole; but this is not honest grouping or truthful design.

ARCHITECT'S NEGLIGENCE.

NEGLECT is often alleged against the architect in the discharge of his duties to his client. This charge may be for some inaccuracy or deficiency of the plans and specification, or that the quantities supplied are not correct; that the final certificate has been given without reasonable care, or for imperfect supervision of works; but there is one kind of negligence that occasionally arises, and we may put it in the form of the question, Is an architect responsible for the expense and delay caused by his plans having been prepared without the consent of the local authority being obtained as to, say, the general building line of the street, necessitating new plans to be prepared? Suppose, for example, the design is for a row of houses or shops in a street, and it is necessary to obtain the consent of the County Council to the building. Is it a natural and reasonable presumption on the part of the employer that the consent of the council has been obtained to the plans? Such a presumption would certainly very seriously affect the independence of the architect. He is employed to make plans for certain buildings in a street, having a certain depth, and so long as he follows the usual custom and does not recklessly take advantage of the ground at his disposal, or bid defiance to any regulations, it would be certainly unfair to him that he should be made responsible for neglect of some regulation, or by-law. Such a presumption would impose a great injustice on architects in the discharge of their professional duties, for, we take it, an architect's chief duty is to exercise his professional skill and experience in the planning and design of the buildings for his client, not merely to comply with official regulations. If his client approves of his plans, the architect is surely entitled to his full remuneration, even if he does not fully comply with the requirements of a local

authority. If it were otherwise, the slightest intimation of a by-law or regulation might be sufficient to rob an architect of his fees and inflict a wrong upon him.

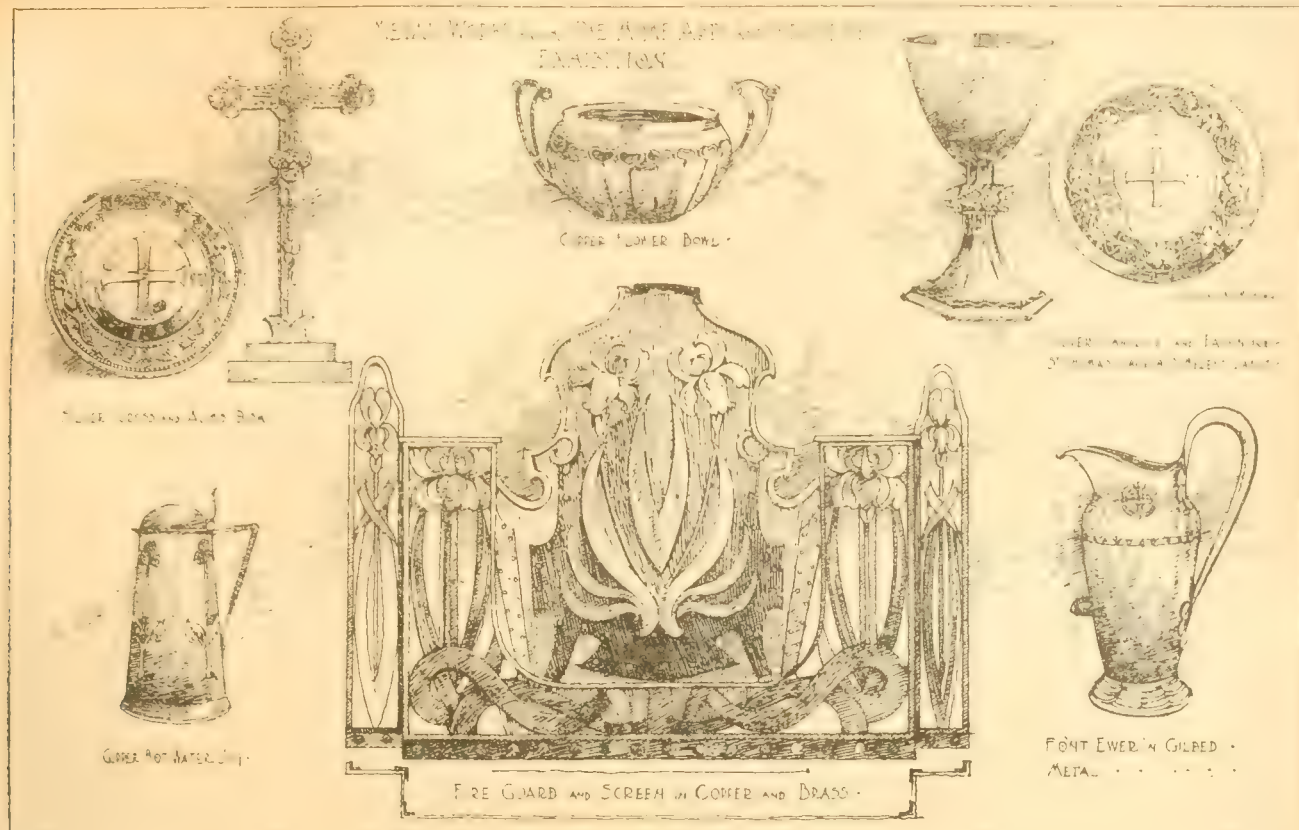
A case was lately heard by Mr. Justice Wigham in the King's Bench Division. The plaintiff, a major, employed an architect to prepare plans for a house, flats to be built at Hampstead. Plans were made and a tender accepted. It was agreed that the defendant should prepare the plans for a certain sum, and would begin the work, and it was assumed by the plaintiff that the necessary consent of the County Council had been obtained; but it was not so. The building-line was found to be in advance of the general line of the street, and new plans had to be prepared to meet the requirements of the Council. Additional expense and delay were caused. It appeared the defendant obtained only the approval of the authority's architect; but it was contended that he should have first obtained the County Council's consent. A number of well-known architects were called, who stated that the defendant had followed the usual custom, and had done all that prudence would suggest, and that it was not always wise to anticipate the Council's objections. The judgment was given for the defendant, with costs. This decision will go to strengthen the opinion that a charge of negligence must be supported by clear evidence that the defendant has not fulfilled his part of the engagement to his client, and that he had not complied with the usual statutory requirements. In this case there was no proof of such negligence; the defendant had prepared his plans and submitted them to the district architect. County Council's objections may and often are uncertain and indefinite, and ought not to impugn the architect's professional work. The expense and delay caused to the plaintiff by having new plans prepared to comply with the Council's line of frontage were accidental; the defendant's plans were no doubt practically of use to the plaintiff. The principle of the decision is based on that of other judgments, that the architect or employer does not warrant the correctness of the plans and specifications, nor does the quantity surveyor guarantee that his quantities are correct. In fact there is no implied warranty on the part of an architect or surveyor that his work is correct. If he honestly executes his work to the best of his ability, he will not be liable for any mistake. All that is required is that reasonable care and skill has been shown in the preparation of the plans. So it can be inferred that an architect who used reasonable care in making plans for a building, though he omitted to obtain the consent of the authority as to a matter of frontage, would be exonerated. The consent of the local authority as to a general building line is a matter that will depend on the surveyor's or architect's certificate, and may in many cases be a mere matter of opinion, as we have evidence to show. The general building line of a street is not always of easy determination; it will depend on the frontage of a part of a street or row of houses, on the distance from the highway. These are matters that vary very much, and it is almost impossible for an architect before he prepares plans for a new row of buildings to obtain this information. The question in defining the line is left to the superintending architect, but is subject to appeal to the tribunal. To make the want of consent a matter of negligence would be certainly to impose on the architect a new condition of a very questionable kind. Any paltry objection of an official kind could be made an excuse for not passing the plans, and a troublesome or litigious client might easily take advantage of this objection for complaint against his architect. But bearing in mind the principle of former decisions, the architect may take courage. The Courts will not render him liable if it can be proved that he

has been discreet and honest, and has been observant of the custom of the profession. They have also maintained the final certificate of the architect, even if it has been given without care, if no fraud or collusion has been proved. On the other hand, the case we have cited may be a warning to those who have to prepare plans that have to be submitted to local authorities. There are employers who are too eager to make any excuse to wriggle out of their just obligations, and there are juries who think that the architect's duties extend to every trifling official regulation, quite irrespective of the skill and services he has rendered to his employer.

THE DUDLEY GALLERY EXHIBITION.

THE summer exhibition of water-colours and sketches at the Dudley Gallery contains a large percentage of drawings one would not have seen hung—the work of amateurs and dabblers in water-colours. These works considerably mar the collection as a whole. This exhibition has at least the merit of bringing together the works of a few conscientious painters of the younger school, who look at Nature with a desire to reveal her beauties according to their preconceptions. Of course, we have literal and impressionist interpretations. C. Duassut sends several of his quiet evening effects in that particularly pearly tone which he affects. "When Evening Gilds the Skies," an open landscape in the Eastern Counties, with its little church and cottages, is poetically conceived. "An Essex Cottage" (42). "Fading Lights," "A Winter's Eve" (226) are all studies in the same vein of sentiment. Sylvester Stannard, well known here and at the R.B.A. for his work, sends several subjects, all characterised by healthful handling and colour. "Over the Hills and Far Away" (15) is excellent in the sunlight over meadows, and the clouds breaking. A more ambitious subject is "The Ford" (58). The landscape is varied with autumnal tints of foliage: the light reflection in the brook and the cloud painting are skilfully managed. His "Moonlight" (109) is also a clever study of landscape and trees, half in deep shadow, illumined by the moon peering through clouds. In another picture, "A Gleam," the painter depicts an open common. A few ricks and group of trees form the main features lit up by a gleam of sunshine. Mr. Stannard's work is true to nature, and his treatment of light and shadow subtle. Fred Dixey's, "Lynmouth, Devon" (7) and his studies at Wargrave are interesting, but lack strength. Fred. Jas. Aldridge has a clever study of fishing-boats, "Katwijk" (9). His "Dutch Trader near Dort" (82) and his view on the Maas exhibit his technical skill in Dutch fishing-boat life and scenery, and his amber-toned atmospheres.

"To Glorious Burial Slowly Borne, 1st Feb., 1901," is the title of a view of the Solent procession of the body of the late Queen. The work looks to be drawn in pastel, and is rather tame, by Nigel B. Severn, whose work is confined to marine subjects. Miss Maude M. Turner has two studies: her "Friends," a little girl feeding pigeons in a cottage (14), is simple and pleasing. The president, Walter Severn, has seven works of unequal merit. First we notice "Tall-tall Castle" (28), a sea, with the castle on its rocky base—a placid scene; "A View of Loch Loggan" (45) is a broadly-handled sketch in simple washes of local colour; and a pleasing study of landscape, "Golden Autumn" (78), is a river scene—a bank of rich foliage in all the glowing tints of autumn gold and red and brown; below a river rippling as it winds its course. Very realistic in its effect is "Sunset at Biarritz," with the red-streaked glow of the setting sun and



reflection on the waves breaking on a rocky shore—a very typical example of the president's skill as a coast painter. There is breadth and colour in his "Road to the Moor, Aberarder" (156). We must also notice James Fack's "Winter in the Highlands" (21), and F. A. Verner's able work, a herd of "Bison in a Blizzard" (31). Mrs. Jane Inglis has an interesting sketch of "Quai Rosaire, Bruges" (30); but the drawing of belfry tower is not very firm. Her other subject, "Cranleigh Common, Surrey" (215) shows artistic feeling. Berenger Binger is an old contributor. "An Old Gateway" (35), "In Ashdown Forest" (39), and his Sussex sketches are broad and truthful. E. Urwick's "Deliberation," a figure subject, shows cleverness and promise; and we must notice Henry Terry's well-drawn child's head—a little girl in green dress and bonnet. "In Thoughtful Mood" (41). Miss Evangeline Jex-Blake is a member whose sketches are always welcome for their decisive drawing and simple colour washes. "The Dolmen of Rondosse" (54) is broad and direct, and so is her clear and bright sketch and reflection in water of "Brittany Peasant Girls going home to Carnac" (72), and "On the Moor, Somerset." Mrs. Sydney Bristowe's "A Reflection" (66) is a clever figure study; and Miss Hilda M. Gordon has a study of an ecclesiastic's head of much character. E. Wake Cook's drawing of "The Loggetta, Venice" (68) is an elevation of a rich marble façade, full of coloured marbles and sculptured panels, well drawn. Two very charming figure-subjects are sent by William Affleck: "Ramblers" (81), two little girls in meadow of wild flowers and grass, engaged in picking flowers; and the other "Autumn Flowers" (113), a little girl in a cornfield interested in the same pastime—both charmingly natural as studies of child-life. Mrs. S. Bristowe's "Under a Red Lamp" is bold and vigorous. A. K. Legge has "Dol, Brittany" (86), a note of colour being given on the red-cassocked cross-bearer and procession. George Marks's very dexterous and subtle rendering of landscape (90), a foreground full of wild flowers, thistledown, and grass, with trees and distant hills, is

remarkable for delicate manipulation and colour. So we can fully realise the sympathetic rendering of "Gorse" (231), a delightful and delicate study of the golden flower. "Fair Flowers of the Fleeting Years" (271), a garden full of bright blossoms, is marvellous in its technical skill; but the colour of red and yellow flowers make a rather garish arrangement. L. Burleigh Bruhl sends many pleasing landscape sketches. His "Streatley Mill" (93) indicates a true sense of colour, as do his sketches of "Passingford Mill." Vigorous and strong in handling is the work of Chas. J. Adams. His "Foaming and Hurrying o'er its Rocky Path" (100), is a rapid torrent leaping through a narrow gorge of rocks, and we also note "Spring Time" (258), and "In the Meadows," as truthful in colour. Miss Christian Severn's "Hartlebury Castle" (105), and her drawings of "Kensington Palace" (153), "Buckingham Palace," and "St. James's Park" may be noticed. "On the Skye Coast" (117), by Finlay Mackinnon, "A Fairy Tale," by Eleanor Brace, are of interest as evidence of zeal, and we can compliment Alice Woodhouse on her flower studies (130). At the end of gallery and on the screen one sees several subjects weakly drawn or feeble in sentiment, as Nos. 131, 144, 146, 147. A contrast to these are the firm sketches on the Medway by Margaret Bernard, as "Off Chatham Pier" (204), "Rochester Bridge and Castle," &c. These exhibit directness and good colour. A nice sketch by Mrs. Evelyn Heathcote of a group of market women (171), and sketches of "Chelsea" (174), "In Brittany" (182), may be noticed. Henry Terry's "Rent Day" (187) is a little hard in execution: the faces of the old smocked rustic and the collector are expressive. With the exception of works by Rose Hake, as her "Babies' Class, Dinan" (196), Mima Nixon's "Paddington Tim: In Memoriam" (195), Catherine Eggar (219), Fred Spencer's realistic studies of apples (233-242), Frieda Rickenbach's "Cottage Yard" (235), Albert Stevens' large view "In the Chamonix Valley" (237), with its masses of colour, Rose Barton's sketch of the "Brompton Road" (302), and works by Mrs. Mary

Stormont, Mrs. E. M. Donne, Alice Ellis, and Sir W. Eden, Bart. (330), we may dismiss the other contributions to the gallery.

METALWORK FROM THE HOME ARTS AND INDUSTRIES EXHIBITION.

THE Fireguard and Screen in copper and brass, designed by Mr. Walter Witter, of Ickleford, Hitchin, is somewhat unusual, both in scale and design. Plates of brass are planted on to the copper structure, and in parts are hammered up into *repoussé* forms, greatly enhancing the effect. Right and left, where the centre part sets forward, seats are contrived, which also may serve as shelves. The silver Chalice and Paten, belonging to St. Thomas's Church, St. Helen's, Lancashire, was designed by Mr. Herbert J. Maryon, and executed by the School of Industrial Arts, Keswick. In the knob of the cup messages are set, and Mr. Robert Temple did the work. The Font Ewer, in gilding metal, designed by the same artist, was carried out for the same church by Mr. Jeremiah Richardson. Mr. Thomas Clark carried out the Alms-dish and Altar-cross in silver, from the designs of Mr. Harold Stables, of the Keswick School.

GARDENS AT HOME AND ABROAD.

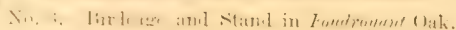
AN interesting collection of water-colour drawings by Mr. and Mrs. Albert Stevens is on view at the Modern Gallery, Broad-street. The series of drawings is entitled "Gardens at Home and Abroad, or Sunshine and Shadow in Foreign Lands." We noticed a year or two ago a similar series of foreign views by the same well-known painters. Mr. Albert Stevens is a master of landscape, and his views in the Riviera, of Mentone, of Cannes, and other Southern lands we have often referred to for their qualities of breadth, colour, and light and shadow effects. We notice in this collection of 130 drawings several beautiful garden scenes at home by Mrs. Stevens, such as "Garden near East Grinstead," in which the blossom is rendered with much firmness and precision; "An Old Vicarage Garden, Norfolk"; "At Haddon Hall"; "Hollyhocks at Harrogate"; a fine view of Holland House, with its parterres of flowers and dark thick hedges of green, pleasing in its massing of colour; also other studies of "Water-lilies, Holland House," "A Corner of Garden." But in addition, Mrs. Stevens has found time to give us some delightful foreign studies of trees, flowers, and blossom, such



No. 2. Admiral Byng's Chair.

MESSES GOODALL LAMB AND HIGHTWAY, Ltd., of Manchester, salvaged the timber and copper of this famous man-o'-war and they have produced as mementoes of "Nelson's Victory" several sets of historical and ornamental articles and a quantity of decorative furniture consisting of a set of four chairs of oak of which the *Foudroyant* was built. The Admiralty in 1806 ordered the building of German ships; the *Foudroyant*, and before the public so much as heard of what had taken place, the old ship was sold by her way to the ship-breaker of the Baltic. So soon as the news reached London, the indignation and condemnation of such vandalism reached the Press from all parts of the kingdom, and Dr. Conan Doyle has written a play about it.

H.M.S. *Nelson*. The Swallow shipping



firm, realising their prize, demanded £2,000, besides the cost of towing the old boat back from the Baltic. A syndicate was formed to retrieve the nation's honour, and the Duke of Cambridge and Sir John Lubbock, M.P., joined the under-

THE testing of all materials suitable for constructive purposes and employed therein is one of the prominent signs that mark the gradual progress and advancement of architectural and



No. 4. An Escriboire and Cabinet.



No. 6.



No. 5. An Upholstered Leather Chair.



No. 7. Hall Seater.

engineering science and technology. Petrean monoliths of sizes and dimensions hitherto unsurpassed were used in bygone days in positions and situations which must have exposed them to nearly every known species of stress, without any preliminary trial or experiment respecting their capabilities to withstand the same. Natural stones, as distinguished from those produced by more modern artificial manufacture, were in those times, when the means of transport were few, tedious, and frequently non-existent, taken on their own merits. Their qualities, properties, and fitness for the work required of them were gauged by the very practical standard of the manner in which similar examples and specimens had performed their duty in structures previously erected. In the present day these conditions are very materially altered. Building-stones are now brought from very great distances, and their

strength, powers of resistance, durability, and other indispensable qualifications can no longer be taken on trust. Besides, new quarries are continually being opened, and experience has abundantly proved that however valuable and excellent the stone of one quarry may be, it furnishes no guarantee that the produce of another, although adjacent to it, will be equally serviceable. The first acknowledgment of the necessity of instituting some test with regard to the properties possessed by building stones was in evidence only a few years ago, when experiments were conducted with the object of determining at least two of their qualities—viz., their specific gravity or density and their resistance to crushing. It was not until subsequently that it became fully recognised that, in addition to ascertaining the general characters of different stones, it was equally essential that their special fitness for the

particular kind of work they were put to should be carefully investigated.

As a rule, the specific gravity, or the weight of a building stone, is a fairly good indication and criterion of its value as a constructive material: that is, the heavier the specimen the better. Tests conducted for this purpose are of great importance, inasmuch as they are closely connected with the weathering, which is almost synonymous with the durability of stones, which, after all, is the qualification which is the most prized by the architect and the builder. Wherever practicable, it will be advisable to examine any old structures which may have been built of the description of stone proposed to be used. The hardness of stones affects their use in various ways, and there are several means of determining this property, which include tests for the resistance of stones to friction or to ordinary wear

water. Although the chemical composition of

order to discover the existence of foreign substances which are to be found in all stones, and

amount of magnesia, are seriously deteriorated

sulphurous and sulphuric acid, exists in abundance in both the atmosphere and the soil. Equally, if not more important than the chemical test, is that performed by the aid of the microscope, which reveals the manner in which the constituent particles or ingredients of the material are mixed

quarried in summer, are worth little or nothing

this incongruous defect.

is desirable to investigate is that of absorption, which is approximately proportional to its porosity or permeability, which demands another trial which may be termed the porous test, and is as follows:—The best stones for the purpose of water or other liquid, which is applied to the surface when the stone is in the position of being set in acids held in rain, with which they frequently come in contact. The action of the acids on to the action of frost upon stones, it will be found that another test must be made. Certain specimens have in one manner, and others in another, when acted upon by a comparatively low temperature for any length of time. Some gradually and others develop a process of superficial peeling off by the formation of scales, while others, again, break up in a manner precisely the same manner as if they had been blown up by dynamite or other powerful explosive. One of the difficulties attending the successful application of a freezing test is the impossibility of assimilating the results of the experiments with those obtained under the natural phenomenon of congelation. Various methods have been employed to imitate the operation of freezing. One method is to place the specimen in a highly concentrated solution of sulphate of soda. As the compound forms into a solid mass, the specimen of the stone is broken up. Another method is to use this method affords some indications of what may be the effect of natural frost upon building stones, not much reliance can be placed upon it. Recently the stones to a cold equal to 30° below freezing-point. A few concluding remarks will accentuate those already made, which unmistakably indicate the necessity for the tests to which we have already drawn the attention of our readers.

The transverse, tensile, and shearing strength of different stones used in the constructive arts is not near as full as it ought to be, and that our records of what has been ascertained regarding those properties are exceedingly meagre and incomplete. The results of experiments conducted with stones of various descriptions, demonstrate that there is a wide difference of strength per square unit, even in the same descriptions of stone. The varying results are due to the fact that the circumstances were far from being identical. The stones used in the experiments, which were mostly in the form of cubes, were left rough on the sides and beds, and others were

unit of area. Our want of accurate knowledge—which is fortunately in the course of being

transverse resistance of stones, has not been productive of any great damage or injury. Nevertheless, that is no reason why we should not make ourselves thoroughly up to date in everything that has been accomplished towards elucidating and placing on a better and a more scientific basis the details of a subject so important.

THE BUILDING NEWS DESIGNING CLUB.

A JURY OF JUDGES.

THIS competition was not a success. The subject being out of the ordinary class of problems probably accounts for this; and yet in these days few architects can afford to ignore this type of work, and none can know too much about so necessary and useful a provision for every town or place of up-to-date character. However, the fact remains in connection with our Designing Club, very few comparatively submitted designs, and the best of these we have chosen for illustration to-day. The design "Pencil Point" is placed first, "Gow Chrom" makes a second, and "Robin Hood" comes third. The following were the instructions submitted to the competitors:

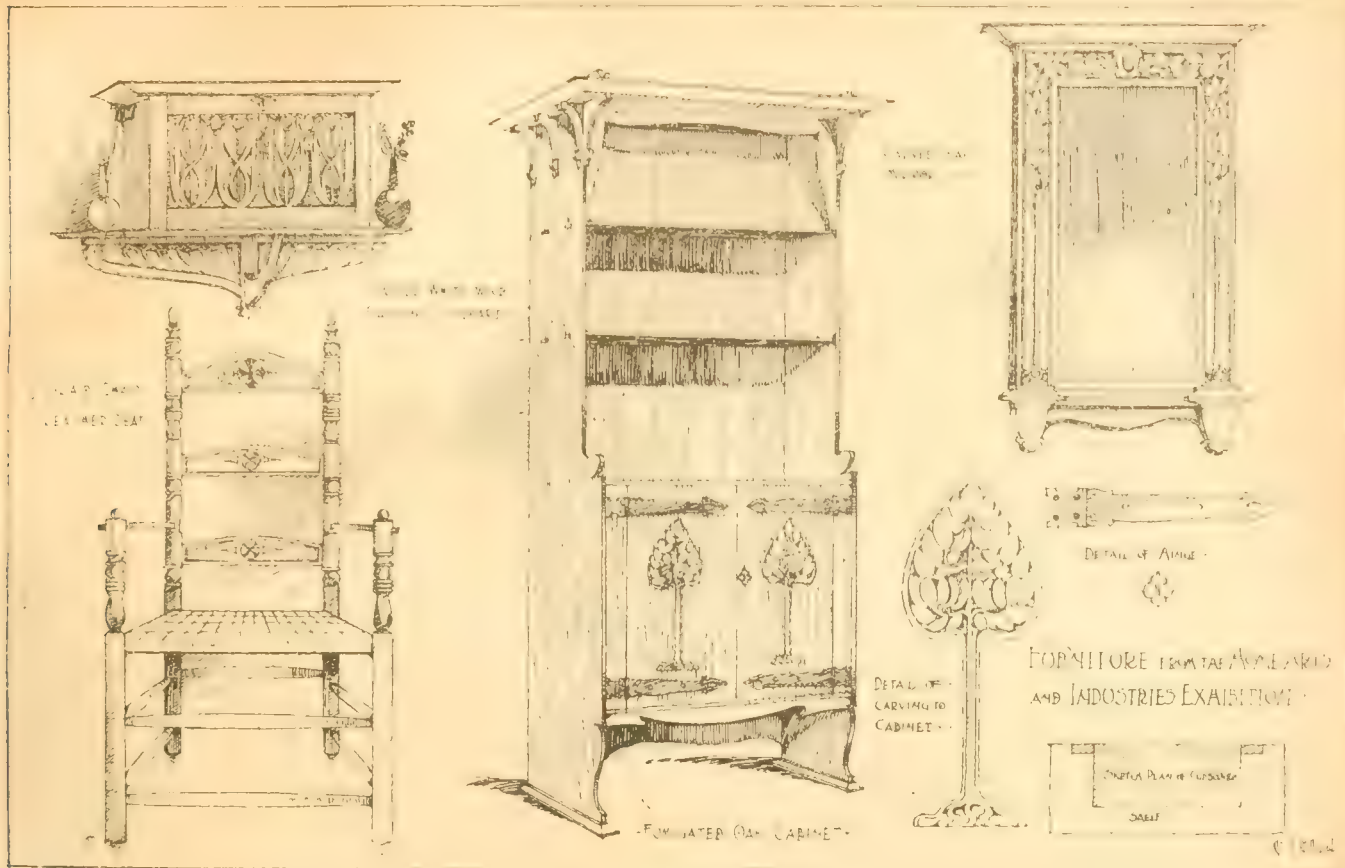
A plan of twelve baths and washhouses, 12 first-class slipper-baths and 20 second-class slipper-baths for men, also 5 first-class slipper-baths and 13 second-class slipper-baths for women. Each department to have a waiting space or rooms, a wall, and a soiled-towel place. The ticket-office to be so placed as to serve for both men and women's departments, as well as for the laundry entrance, which is to be distinct from that of the baths. The women's baths to be on the first floor, extending the whole length of the frontage. The washhouse to provide for 30 tubs and 30 drying horses and two hydros; adjoining the washhouse provide an ironing room, with two mangles and two ironing tables and an ironing stove. Two w.c.'s for washers. The superintendent's office is to be centrally placed, for efficient supervision. Provide pass-door between the first and second-class men's bath departments, for use of attendant, and upstairs provide a small inclosure for attendant supervising both first and second-class baths for women. In basement provide an establishment laundry, with soap-tub, washing-tubs for two, small mangle, one hydro, and an ironing-table and stove. One w.c. for staff. An engineer's room, with 5 H.P. engine. Officers' mess-room. A boiler and heating-room, with two boilers, 12 ft. by 6 ft. each, and a coal-place. On the first floor provide a general store reached direct from washhouse by spiral staircase. Put asphaltic flats over rear building which will be of one story only. The site facing the south is 80 ft. wide towards the street, with houses on either side, and 64 ft. deep. Light cannot be obtained on any but the frontages of the land, and access only from the street. Column shaft from boiler 60 ft. high. Use red brick and stone dressings, and slates for roofs. Treatment, a plain rendering of the Renaissance style, with shaped gables, not bald in effect, but made appropriate to a municipal block of buildings. The pavement is level, and there will be a forecourt 10 ft. deep inclosed with dwarf wall and wrought-iron railing. Ground floor 2 ft. above level of street. Scale 8 ft. to the inch for elevation and section; plans may be drawn, if necessary, 16 ft. to the inch. Include a sketch view. Size of paper, 24 in. by 18 in.

The design awarded the post of honour leaves the others far behindhand, and what merit his scheme possesses belongs to the plan, for "Gow Chrom," the second man, has a much better elevation. "1901," however, is far from perfect. He gives three distinct entrances, and one pay place, as stipulated. The lighting is most indifferent. The w.c.'s depend upon top lights, and so would not pass the local by-laws in most towns. The women's baths stairs are very awkward with the winders at their base. The basement closets and lavatories would be very objectionable, and the stairs down very dark. The engine-room would be quite dark, and the boilers are ill-considered and not large enough for the work they would have to do. No provision is made for the ingress or exit of the boilers, a not uncommon fault in executed baths, by the way. The men's baths are fairly convenient, but the internal w.c.'s are badly placed, and the circular stairway leading up to the women's baths on the first floor is a questionable detail. The washhouse compartments are not quite well placed, as the space

between the wall and last division is needlessly cramped, and should have an end on, which would make the space even less. The hydros are best placed at the ends of these compartments. The horses are well located. The mangles have no room to run in, and too much is made of the ironing space. That is done best at home for the most part. The iron stairs, before-mentioned, connect the women's baths with the establishment laundry. A towel shoot or lift would have been better, and the smell of washing would have been less liable to permeate the building, as it now must do. The waiting-rooms should be more directly associated with the baths. Here they are little boxes off the main landing. The w.c.'s have each a good direct vertical light. The elevation needs no description. It fairly well tells its tale and offends no one, even if it fails to excite admiration and is lacking in distinction. A high type of monumental style would be out of accord, of course, with such a building; but there is no reason why good proportion and grace of form should not be adopted.

"Gow Chrom" has several merits, but by drawing his plans to so small a scale they look more cramped and crowded than they need or possibly would be. The waiting-room is common to both first and second-class bathers, with one w.c. between both classes. This is very objectionable. The better class would consider this a great disadvantage. The loss of space in the intermediate corridor is bad planning, and it would be very dark in this part of the building. The entrance to the washhouse is not direct enough, and the waiting space is not improved by the w.c. located in the corner, while the bonnet lockers would block up the windows. The boilers are stowed too far away at the back of the basement, where they could not be got in, much less got out, for they could not turn. The coals would have to be carried in by the sack. These remarks will suffice to show the inadequate character of the plan in some leading essentials. The first floor is better, but the flat roof over the laundry is not the best shape to let off the steam and moisture. The elevation of this design is good and suitable, though the end gables are too sharp a pitch to be shaped as they are. It is a matter of regret that "Gow Chrom" did not make a more suitable sheet for illustration, thus excluding his chance of publication.

"Robin Hood" has a very poor plan, and though there is a sense of reserve and good taste in this façade, we think he is a long way behind the last-named design. The arrangement generally is at fault, because the one ticket-office does not serve the washhouse as well as the baths, thus necessitating two ticket-clerks where one should suffice. The receiving counter to the laundry shows that the author has misconceived the object of the washhouse where laundry work is, of course, not taken in, but where women come to wash their own things. We need hardly describe his plans further. The w.c.'s inside the building are faulty provisions, and the planning of the baths is confused and ill-considered. With such criticism, "Jove," who comes next, may wonder why he was not placed higher. In some ways he deserved to be, but then his plan, in other respects, is no improvement, while his elevation is hardly so good. The double staircase to the women's baths is a needless waste of space, and the corridor space too is by no means economically contrived. The washhouse is good, excepting the w.c. accommodation, with no vertical windows. The boilers, as before, are stowed away with no light and no air, and it is impossible to say how the drying-horses could work with no air inlets. "Quiz" comes next, has a better laundry, and his boilers are more practically located, but they could not be got out unless the front wall is pulled down. Much space is wasted on vestibules, lobbies, and the like. The wide-played skew-backs to the openings of the façade are ugly, and the design is not a success. "Taffy" has a crowded plan. It would be impossible to get at some of the drying-horses when they are out, as half one bay of them run right on to the enclosing wall of the mangling-room. "Primus" draws poorly. The men and women enter by the same doorway, and the scheme is far from compact. The requirements of the laundry engineer are misunderstood. "Pencil Point" sends an elevation with some merit, and looking like a bath and washhouse building, but it is not highly interesting with its crude skyline. The hydros cramped in between the washing-compartments would never do. Much said before applies to



this and the following designs, which rank in finishing as follows: "Zisca" and "Quercus."

A COTTAGE HOSPITAL.

We have combined the best of the designs for the last, and this subject on one sheet of illustrations, because none of the others for either seem equal to the requirements of publication. This is a matter for regret, and while the technical specialities of a bath and washhouse building may afford some excuse for the paucity of the plans sent in, there can be hardly any adequate apology for the want of merit in the designs sent in for a cottage hospital, one of the simplest class of buildings possible. "Primus" is placed first, "1901" comes second, and "Jove" takes the third place. These were the conditions:—A cottage hospital for an open site, the ground of which is level. The accommodation is to comprise two wards of eight beds each for either sex, and an isolation ward with special cases with two beds. A day-room for men and women, each 14ft. square or of that area; a matron's room about 12ft. square, and a store for her use; a day-room for nurses, of similar size; a kitchen, and offices. Each wing to have a bath and two w.c.'s and urinal for men; also nests of sixteen lockers for patients' belongings, eight in each department. Upstairs three bedrooms—two for nurses and one for servants—and a bedroom for the matron. Bath and w.c. on same floor with good linen-room and box-room. Entrance front to face S.W. Style adapted to brick, with stone sparingly used, and tiled roofs. Ward ceilings may extend into their roofs, and not be less than 16ft. high. Other rooms on ground floor 12ft., first floor 9ft. pitch from floor to ceiling. Two elevations, one section, two plans, and view. Scale 10ft. to the inch; size of sheet 24in. by 18in.

The first design is by no means a satisfactory one, and we recognise its faults; in fact, we are not sure that it justifies publication. However, it is the best of the series, taking one point with another, and as such it is given. The wards have no nurses' duty-room, which might have been placed in the position occupied by the locker-room. The lockers might have gone on one side of the corridor, or where the bath is placed. The latter would come better in the w.c. annex. The day-rooms only reached through the wards do not make a good arrangement, though it gives a sunny position. Of the elevation little need be said. The trivial dormers would have been better omitted.

"1901" is a poor draughtsman cramping up

his sheet in an ungainly way. His plan with radiating wards has much to recommend it, and the ingenious day-rooms lead into an open verandah well supervised by the matron and nurses' rooms, but the sexes would mix objectionably, which would hinder facility of control, and the matron should not have her windows overlooked by the patients in this way. There is no duty-room, and the corner sliced off the wards by the diagonal line made with the main wall of the central block spoils the shape of these rooms. The roofing would be expensive. In detail the design is open to many modifications, but "1901" is on the right lines, and if only he had carried them further he would have come in first. "Love" has studied other people's designs, but he draws in an inky ineffective way, over-etching his work. The plan has a dark square central hall, and day-rooms reached before the wards. The isolation ward is well at the back to the rear of the women's wing. "Pencil Point" spoils his façades by flashing high lights diagonally across the walling in a highly conventional and restless way. The day-rooms are at the back, which would look north, we presume. The verandahs on the south side are very good and well sheltered and under control. The isolation wards are not detached by ventilated corridors. "Primus" is none too good in this respect, but "Pencil Point" is worse. "Iona" is a careful contributor, and more artistic than most, though his design is wanting in breadth. The trifling breaks on plan where the seats are placed hardly justify such a change in roofing. The effect is trivial, and cost would be excessive. His plan is commonplace, save that the extraordinary method of placing the isolation room in the centre of the main block next the entrance is curiously adopted. "Quercus" sticks to his work, which is commendable. He gives double wards, and places his day-rooms on each side of the front entrance, the matron and nurses' rooms being put to the rear. His elevations are better than some others. "Zisca" runs his wards backwards, and so confines the air-space in between the buildings. "Wengbury" has radiating wards with regular duty-rooms attached, and proper bath and sanitary annex buildings, and his isolation ward is practically located. The day-rooms have verandahs skirting the ward walls on the sheltered side. The author's drawing is very poorly executed, and his design is exceedingly indifferent from an architectural point of view, though we suppose "Wengbury" would urge that he aimed at no such pretensions.

Good proportions and shapely forms are no less practical than ungainly ones, and we must take the contributions to our Club as a whole in judging their merits. "Taffy" sends a cramped plan, with no thorough ventilation to the wards and no light to the central square hall. "Willie" and "Ivanhoe" complete the series.

FURNITURE FROM THE HOME ARTS AND INDUSTRIES EXHIBITION.

THIS sheet of sketches shows some of the more up-to-date specimens of furniture brought together at the recent gathering of amateur work at the Albert Hall in connection with this prosperous and useful society, whose classes continue to increase throughout the country. All the pieces illustrated are from the Ascot School, presided over by Mrs. Leopold Rothschild. The execution leaves nothing to be desired, and the lines chosen by the designers of the examples in question are reserved and simple, quite in keeping with utility and the needs of everyday purposes. The drawing furnishes particulars of the materials employed, and if there is nothing specially novel in the articles, they are none the less adapted for their purpose. What little ornamentation they display is good of its kind, and unlike much of the more usual type of over-elaborated examples familiar from the majority of the classes, the Ascot School is not afraid of simple carpentry and plain construction—a remark which embodies no small degree of commendation.

The Vicar of Wymondham, Norfolk, is about to make an appeal for restoring the great Perpendicular church, the nave of an earlier Benedictine edifice now in ruins. It is proposed to repair the beautiful roof, to replace the unsightly pews by benches, and to open out the great western archway. Of the £20,000 required, one-half has already been promised.

At Zermatt a syndicate is about to carry out improvements and sanitation, and to secure the village against the danger of fire. An extensive system of drains and sewers is being built, and a large network of water-pipes is being laid down for the supply and distribution of spring water. Large quantities of water deviated from the Trift, the torrent that runs into the Viège, will be kept constantly flowing through the main and branch drains. The water for drinking and for irrigation is being brought from the vale of Trift into a large tank built above the village.

Mr. R. H. Bicknell, an inspector of the Local Government Board, has just held an inquiry into the application of the Castle Ward Rural District Council to borrow £2,000 for works of sewerage and sewage disposal for Dinwiddie Colliery. The sewerage will gravitate to the outfall, and be disposed of bacterially. Mr. Harry W. Taylor, A.M.I.C.E., of Newcastle-on-Tyne and Birmingham, is the engineer. There was no opposition.

Building Intelligence.

BASFORD, STAFFS.—Memorial-stones of a new Wesleyan school-chapel at Basford were laid on Thursday in last week. The entire scheme which it is intended ultimately to carry out provides for a chapel on the main road from Newcastle to Hanley. Close to the chapel will be the schools, of which the memorial-stones were laid last week, and next to the schools will ultimately be erected a house. The design of Messrs. Ford and Slater, architects, Burslem, was selected in open competition. The school is planned in the form of a cross, comprising an assembly-room 52ft. by 33ft.; four classrooms, entrance porches, heating vault, &c. The assembly-room may be enlarged by removing folding partitions. The building is also planned so that three more classrooms may at any time be added with facility, with the same arrangement for merging them into the assembly-room if required. The walls will be cased with red facing bricks, with moulded terracotta dressings, and figured pitch-pine will be used in the interior for wainscoting, pulpit, roof, and partitions. The contract for this part of the scheme amounts to £1,255, and the builder is Mr. J. H. Broadhurst, Burslem. The total cost of the school-chapel is about £2,500, and the sitting accommodation will be for 300. The entire scheme is estimated to cost £7,000.

EDINBURGH.—The foundation-stone of the north front of the extension of the City Chambers was laid by the Lord Provost on Friday. It is several years ago since the plans by Mr. Robert Morham, city architect, for the extension of the City Chambers were sanctioned. About £200,000 are to be spent on the extension and improvement of the buildings. The work has gone on in sections, chief among which was that part on the west side of the Exchange, and extending westwards to Warristoun-close, in which the new burgh court-room, council refreshment-room, and museum are situated. The portion now arranged for will be continued along Warristoun-close, and will have a frontage to Cockburn-street and the north. On that side it takes the place of the City Hotel, which was purchased for the purpose, and the new building will be carried up to the height of the present City Chambers. From the pavement at Cockburn-street, with which it will be brought into line, this block will rise to a height of about 120ft. The estimates for the part of the scheme now being built amount to between £15,000 and £16,000. Lifts will be provided from Cockburn-street to the various stages of this block, both for passengers and stores. The chief contracts have been secured by Messrs. Turner and Sons for the mason work, and by Mr. Colin McAndrew for the joiner work, and it is hoped that the extension may be completed by the end of next year. It is intended that the block will be faced with Prudam stone. The other parts of Mr. Morham's design still to be executed include the extension of the whole of the north face of the present City Chambers to the line of Cockburn-street, and its extension southwards by Allan's Close, with central dome and lantern; but this important contract has not yet been let.

HERNE BAY.—On Saturday Sir H. Campbell-Bannerman, P.C., M.P., opened the Passmore Edwards convalescent home for railway men. The home is pleasantly situated on high land at Beltinge, to the eastward of Herne Bay, only a quarter of a mile from the sea, and close to the Friendly Societies' Home, which also owed its establishment mainly to the munificence of Mr. J. Passmore Edwards. In the case of the home for railway men, Mr. Passmore Edwards originally made a gift of 3½ acres of land as a site and £5,000 to the building fund; but he has since contributed a further £1,000—the cost of the furnishing—and started the library with a nucleus of 500 volumes. The building, which was built from designs by Mr. A. Saxon Snell, F.R.I.B.A., is Queen Anne in style, and contains accommodation for 100 patients. The cost of erection has been about £12,000.

LEEDS.—An hotel and other premises are in course of erection by the Leeds Central Estates Limited on the sites of the old hostelry, the Bull and Mouth, and three shops fronting to Briggate, and of a large quantity of cottage and other property at the rear. The estate has a superficial area of about 5,000 square yards, with frontages of 117ft. to Briggate, 121ft. to Kirkgate, and 109ft. to Central-road. The cost of the estate

was no less than £196,500. The Corporation have bought a strip of the land for the making of a new street from Kirkgate to Duncan-street. The buildings now in the course of erection, designed by Mr. T. W. Cutler, F.R.I.B.A., London, comprise an hotel, emporium, twenty-one shops, and a restaurant. A noteworthy feature of the façade will be its embellishment by the two figures, representing "Summer" and "Autumn," now being exhibited in the Sculpture Room of the Royal Academy. These are the work of Mr. F. E. E. Schenck, sculptor, London, and will serve as corbels, supporting pilasters. The hotel will have a frontage to the new thoroughfare (New Central-street) as well as to Briggate, and its accommodation will consist of billiard-room with eight tables, buffet and luncheon-bar, dining-room, lounge, smoke-room, commercial rooms, drawing-rooms, twenty-nine stock-rooms, and bedrooms for 140 visitors. The emporium facing the principal thoroughfares will be of six stories, and have a floor area of 4,066sq. yds., and a window frontage of 320ft. The twenty-one shops and the restaurant will front Kirkgate, New Central-street, and Central-road. Messrs. Armitage and Hodgson, builders, Leeds, have the building contract; the price is £96,615. Including the cost of the estate, the enterprise represents an expenditure of considerably over £300,000.

MUSWELL HILL.—The first portion of the new church of St. James, Muswell Hill, N., consecrated on May 25, consists of the chancel and morning chapel, and two bays of nave and aisles, together with vestries and organ transept. When completed, the nave will be 96ft. by 30ft. inside dimensions, and aisles of same length, by 13ft. wide. The chancel is 40ft. by 28ft., and morning chapel 40ft. by 15ft. 3in. The choir and clergy vestries are divided by a movable screen, and will form a parish hall when the screen is folded back. The style of the church is Perpendicular Gothic. The walls are faced inside with sawn Ancaster stone, and similar stone, roughly faced, is used for the outside casing of walls. The elaborately-moulded pillars, arches, and traceried windows, doorways, &c., are of carefully selected Bath stone, twice coated with fluate of magnesia, to prevent risk of decay. The roofs are all open-timbered, of pitchpine, those to nave and chancel and chapel being of circular barrel shape, and panelled by means of principals and ribs. The floors in chancel and passages are paved with marble mosaic, those under seats with maple wood blocks. Canadian oak seats and clergy and choir stalls are provided. Sittings for 950 persons will be provided in the completed church; the present seating is for about 500. The cost of the present portion of church is about £6,500. The complete church, exclusive of upper part of tower and spire, will cost about £13,000, and it is intended to proceed with the erection of the remaining portion of nave and aisles and lower part of tower as soon as the original old chapel-of-ease has been removed. The architect is Mr. J. S. Alder, of 1, Arundel-street, Strand, W.C. The builder is Mr. John Bentley, of Waltham Abbey.

NEWCASTLE-ON-TYNE.—The foundation-stones were laid, on Wednesday week, of Wyclif Baptist Church, Elswick-road, Newcastle-on-Tyne. The style is Perpendicular Gothic freely treated. The accommodation in the church is for 306 adults, or for a mixed congregation of about 350. A future end gallery is provided for to seat 100 adults or 120 mixed—or an eventual total of 470 mixed. The choir is on the platform in front of the pulpit, and the baptistery is also on the platform, covered when not in use; the organ is in an apse behind the pulpit. The building consists of a wide nave with hammer-beam, open-timbered roof, and plastered ceiling, and double transepts on each side, with timber arches supported on iron columns, each transept being lighted by a three-light traceried window, projecting portico in front, with vestibule and inner lobbies with swing-doors, and a vestry on one side, and a staircase on the other side in the tower leading down to school, and up to gallery in the future. A staircase on each side of pulpit leading down to the school below church, and to minister's and teachers' vestries; a ladies' vestry behind the pulpit. The seating is arranged semi-circularly on the plan, so that every hearer directly faces the minister. The heating will be by hot-water pipes and radiators. There is a school under the church, and a church parlour 19ft. by 13ft.; also heating chamber and lavatories, &c. The external walls are faced with red pressed facing bricks, with tawny terracotta dressings and

tracerie, &c. The contract for the building is £4,383, including boundary-walls, gates, railings, &c., but exclusive of the upper portion of the tower. The builder is Mr. Alexander Bruce, Newcastle, the architects are Messrs. George Baines, F.R.I.B.A., and Reginald Palmer Baines, Clement's Inn, W.C.

PONTELAND.—The Newcastle-on-Tyne Board of Guardians have bought some 70 acres of land near Ponteland, on which to erect cottage homes for pauper children. The scheme contemplates at present the erection of a superintendent's house, four blocks of semi-detached cottages, and a half-block to be used as a hospital if required. The buildings all have a south aspect. There is to be a workshop block to the south of the road. Each block stands in its own garden with its own footpath, a back road running round the homes, while in front on the south of the road is a playing green. Mr. Humphrey Atkinson has been appointed clerk of works, and the whole of the work is being carried out under the superintendence of Messrs. Oliver, Leeson, and Wood, architects, Newcastle-upon-Tyne, and Messrs. E. Henderson and Son, of Ponteland, were the contractors.

YORK.—The Estates Committee of the York City Council will submit a complete scheme for improving the Theatre Royal at a special meeting of the corporate body to be held on Monday next. In their report they state that, according to the conditions of the lease, Messrs. Waddington are, prior to January 1, 1902, to expend a sum not less than £1,000 in decorating the interior of the theatre, painting the interior wood and ironwork, and providing electric-lighting fittings, and in reseating parts of the theatre and providing new dressing-room and lavatory accommodation. The Corporation are under a liability to maintain and keep the roofs, main walls, and main timbers in good repair, to paint the outside wood and ironwork, to wire the theatre for the purpose of a supply of electric light, and to provide modern sanitary conveniences. The committee instructed Mr. Frank A. Tugwell, A.R.I.B.A., architect, of Scarborough, to report on the condition of the theatre, and as to the alterations necessary to bring it up to date. Mr. Tugwell reported that the theatre is unsatisfactory both from an actor's and a spectator's point of view, and he submitted to the committee a plan throwing into the auditorium an additional width of 17ft. on the north-west of the building. This allows room for the planning of a modern theatre with all its necessary accommodation, together with a stage of adequate size. The estimated cost is £5,292. The committee recommended the council that the scheme suggested by Mr. Tugwell should be carried out, Mr. Tugwell being retained as architect at a commission of 5 per cent., his remuneration for the preliminary report to merge in the commission. This recommendation is subject to the following financial provisions, in which Messrs. Waddington have expressed their concurrence, that upon the £3,292 or whatever sum may be the ultimate balance of expenditure, Messrs. Waddington will pay during the term of their new lease interest at the rate of 7½ per cent. per annum.

A new Congregational church was opened on Tuesday at Oakleigh Park, near Barnet. It has been erected at a cost of £6,000 from designs by Mr. E. F. Knight.

In the case of the application on behalf of William Edwards and Edward George Medway (deserted in the receiving order and carrying on business as Edwards and Medway, Ethelred-street, Kennington-cross, S.E., and Dorothy-road, Laverden Hill, S.W.), builders and contractors, and co-partners, a discharge from bankruptcy has been granted.

The Incorporated Gas Institute held its annual meeting on Tuesday at the United Service Institution. Mr. T. Ormiston Paterson, the president, delivered his inaugural address, and subsequently, after a long discussion, a resolution was carried affirming the desirability of the amalgamation of the institute with the Institution of Gas Engineers.

The timber-wharf on the south side of Ramsden Dock, at Barrow, caught fire on Tuesday, and was practically destroyed before the flames could be extinguished. Lying alongside the wharf was the armoured cruiser *Euryalus*, recently launched by Messrs. Vickers, Sons, and Maxim, Ltd., which was considerably damaged by fire. The wharf was recently constructed for the Furness Railway Company by Messrs. John Aird and Co., and was only partially insured. It cost about £20,000.

Engineering Notes.

The whole of these new works have been carried out by Messrs. Douglas and Arnott, of Westminster, were the contractor for the pier; and Messrs. A. Faisey and Son, Leytonstone, and Messrs. B. Cooke and Co., Westminster, were the contractors for the

new generating station for the supply of electric light to the station. The station is equipped with three Lancashire boilers, and fed by three Lancashire pumps, capable of supplying 3,000 gallons of water an hour. The chimney is 125ft. in height. The engine-room contains three steam-engines, each 1251 H.P., and running at 500 revolutions per minute. Each engine is coupled to an alternator capable of giving 75 kilowatts, equal to 1,000 16c.p. lamps. The magnets for the alternators are excited by a current taken from two storage batteries of 60 cells each, supplied by the Chloride Electric Storage Syndicate. Besides the engines there is a motor alternator, either end of which can be run as a motor. A five-ton overhead travelling crane is included in the equipment of this department. Mr. T. Foster was the architect, and the buildings have been erected by Mr. James Merritt, of Birkenhead. Mr. T. L. Miller was the consulting engineer, and Mr. Ernest Marples the resident engineer. The length of mains at present laid is 25,774 yards, or nearly 15 miles, and there will shortly be further extensions.

WALKER-ON-TYNE.—The inauguration of a new gas-holder at Walker gasworks took place on Friday. The gas-holder is constructed upon a Douglas Improved Grid and Mason type erected in a brick tank. The gasometer is telescopic in its action and appearance, and is of the spiral-guided type, thereby being distinguished from the other gasometers in the district which are fitted with columns of guiding frames. The gasometer is supported and guided in its working position by means of spiral rails attached to the face of the holder. This is the first holder of the sort erected in the Tyneside district, though during the last 10 years upwards of 115 have been built, varying in size up to 150ft. in diameter, with one, two, and three lifts. It is claimed that the spiral-guided gas-holders are cheaper than guide-framed gasometers, that they can be kept in perfect order at a low cost, and that the guide rollers are fixed upon the dip of the holding or coping of tank and are always accessible. In the present instance the tank is 82ft. in diameter, by 23ft. 6in. deep. The outer lift of the holder is 77ft. 9in. in diameter, and the inner lift 75ft. 6in. in diameter, with a capacity of 300,000 cu. ft. The work in connection with the tank has been carried out by Mr. D. N. Brims, of Newcastle, and the ironwork by Messrs. R. and J. Dempster, Ltd., of Manchester.

The Sheffield Board of Guardians are about to apply to the Local Government Board for sanction to borrow £15,000 in instalments for hospital extension.

Messrs. E. H. Shorland and Brother, of Manchester, have just supplied their patent Manchester water and gas meter to the Bradford water-house, Nottingham.

The contract for providing two additional lines between Ouston Junction and Low Fell Station, on the North Eastern Railway, has been let to Messrs. Ridley and Sons, contractors, Middlesbrough, and they have commenced work on the section south of Ouston Junction.

COMPETITIONS.

NEW ARCHITECTURAL AND BUILDING SOCIETY.—The President of the Society, Mr. J. R. Elliott, C.E., of Nottingham.

At the last meeting adopted the following report by the assessor, Mr. Thomas J. Bailey, F.R.I.B.A., architect to the London School Board, upon the competitive designs for the new Victoria Boys' School:—"The four sets of plans are labelled in series—viz., 'A,' 'B,' 'C,' 'D.' I have given careful consideration to each one in conjunction with your conditions, and feel that the one deserving of the first place is that lettered 'B.' There are points about the others which in my judgment render them inferior to that design." The board then opened the sealed envelopes containing the names of the competitors, viz., A, Mr. C. P. Ayres; B, Mr. John Hunt; C, Messrs. Fridmore and Anderson; D, Mr. W. H. Syme. It was unanimously resolved that Mr. John Hunt should be appointed architect upon the terms mentioned in the conditions of the competition.

CHIPS.

The President of the Local Government Board has appointed Major-General H. Darley Crozier, R.E., to be chief engineering inspector of the Local Government Board, in the place of Major-General C. Phipps Carey, R.E., who has retired. Mr. G. Waller Wilcocks, M.Inst.C.E., has been appointed deputy chief engineering inspector, in succession to Major-General Crozier. The President has also, as we foreshadowed some months ago, appointed Mr. Brook Taylor Kitchen to be architect to the Local Government Board, in the place of Mr. P. Gordon Smith, who has retired.

On Thursday in last week, at Hoyle, Mr. H. P. Boulnois, inspector under the Local Government Board, held an inquiry regarding an application by the district council for permission to borrow £13,500 for the extension of electric-lighting works and cables.

Mr. William Quiller Orchardson, R.A., has been elected a Foreign Associate of the French Academy of Fine Arts as successor to M. Broszok. Since 1895 he had been a correspondent of the Academy.

The new operatic theatre at the Cardiff Infirmary was opened on Thursday in last week. It has been built at the cost of Mr. Thomas Webb from plans by Mr. Edwin Seward, F.R.I.B.A., of Cardiff.

The footway tunnel below the Thames, for the purpose of connecting the southern bank of the river at Greenwich with the northern bank at Poplar, has now been carried all the way from bank to bank. Its construction has occupied about two-thirds of a year, and the whole work when completed will cost about £110,000.

An adjudication in bankruptcy has been made in the case of James Pullen, Kennington Park-road and Amelia-street, Kennington, S.E., builder.

The Bishop of Rochester consecrated a new chancel at St. Barnabas, Gillingham, near Chatham, on Tuesday.

Mr. H. P. Boulnois, an inspector under the Local Government Board, has held an inquiry at Holywell into the application of the rural district council for sanction to borrow £2,500 for works of water supply for Bagillt.

The chairman of the Derwent Valley Water Board, Mr. T. R. Gainsford, of Sheffield, presided on Monday night at a dinner at the Hotel Cecil, given to mark the commencement of the works of the board, and to meet the Lord Lieutenant of Derbyshire (the Duke of Devonshire) and others. The board, which is the largest of its kind in the kingdom, was formed by Act of Parliament of 1899, and operates in the towns of Sheffield, Leicester, Nottingham, and Derby, and the counties of Derby, Notts, and Leicester, supplying water from the Upper Derwent Valley in the Peak district to upwards of 2,000,000 people. The supply given by the board is only designed to supplement existing supplies. The authorised capital of the board is between £5,000,000 and £6,000,000, to secure which they have power to charge the rates of Sheffield, Nottingham, Leicester, and Derby.

The governors of the Northampton General Infirmary have decided to carry out a scheme of renovation at an estimated cost of from £15,000 to £20,000. Sir Henry Burdett's scheme provides for the building of a home for the nurses, who are now housed in rooms at the end of the wards, and a complete renewal of the sanitary arrangements. Many of the walls are to be rebuilt, floors are to be relaid, and the whole of the ventilation is to be replaced by a better system.

PROFESSIONAL AND TRADE SOCIETIES.

EDINBURGH ARCHITECTURAL ASSOCIATION.—A special meeting of this association was held in the Royal Institution on Wednesday, the 5th inst. Mr. Henry F. Kerr, the president, in the chair. The chairman referred in fitting terms to the death of Mr. John M. Brydon, London, and it was resolved that an expression of the association's regret and sympathy be sent to the relatives of the deceased. Votes of thanks were awarded to all who had contributed directly to the success of the recent visitations, Mr. J. G. Goodchild, of the Geological Survey, being specially mentioned in connection with the "geological ramble" in the Queen's Park. Professor Baldwin Brown addressed the meeting on Durham, Hexham, and Chesters, with the view of conveying a general idea of the character and aspect of the principal buildings, &c., to be visited on the occasion of the association's annual excursion to-day (Friday) and to-morrow. His remarks were illustrated by lantern transparencies.

NORTHERN ARCHITECTURAL ASSOCIATION.—An excursion meeting in connection with the members of this association was held on Saturday, the place visited being Hexham. The party, numbering between twenty and thirty, were met at Hexham station (having journeyed by the 3.5 p.m. from Newcastle) by brakes, and drove to the new residence of the Rev. E. S. Savage, on the Oakwood Banks on the north side of the river. After inspecting the rector of Hexham's new house (which is not yet ready for occupation), the party returned to Hexham, and having seen Hexham House and Duke's House, inspected the grand old Abbey. In addition to Mr. F. Caws, the president, the party included Mr. Arthur B. Plummer, Mr. Glover, Mr. J. W. Taylor, Mr. H. Taylor, Mr. Sheriff, Mr. Orwin, Mr. Corking, Mr. Hicks, Mr. Charlwood, Mr. Errington, Mr. Badenoch, Mr. Bruce, Mr. Dyson, Mr. White, Mr. Featherston, Mr. Stevens, Mr. Rayne, &c.

The memory of the late vicar of Shirley, the Rev. Charles Burd, has been commemorated by the erection of a stained-glass window in the south transept of the church. The window consists of four lights and tracery, and the subject illustrated is the Miraculous Feeding of the Four Thousand, the text of the last sermon preached by the deceased in the church. The canopy and base are treated in a structural design, the cinquefoil piece of tracery over the centre lights representing Our Lord seated in majesty, surrounded by cherubs. The work has been designed and executed by Messrs. Camm and Co., of Smethwick, of Birmingham.

In a post-card just to hand dated from the foot of Mont Cenis, Mr. Harry Hems says:—"Reading over my recent notes made me feel like starting afresh; so here I am at the foot of Mont Cenis, just about to start covering it again on foot as I did thirty-seven years ago."

Schemes of sewerage from Mr. W. H. Radford, Nottingham, and Mr. W. H. Simpson, Leicester, have been referred for consideration to the Parochial Committee of St. Ivel.

In the House of Lords on Monday, the London Bridge Widening Bill (Amendments) was read a third time, and passed.

The draft Constitution for the proposed Federated Institutes of Australasian Architects, as revised by the Sydney Committee of Architects, and embodying the suggestions of the various State Institutes, has been forwarded to the latter. This will, no doubt, receive in each State further careful consideration before being submitted at the Melbourne Conference.

The foundation-stone of new elementary schools was laid at Winton, Co. Durham, on Monday. The architect is Mr. J. H. Morton, and the contractor Mr. M. A. Armstrong.

The Bishop of Bath and Wells dedicated, on Thursday in last week, the west front of the Bath Abbey, which has just been restored under the advice of Mr. T. G. Jackson, R.A. The cost of renovation, so far as the west front is concerned, has been about £2,000. Six new angels have been placed on the ladders on either side of the west window, replacing those which, owing to the action of the weather on the perishable stone, appeared to be moulting their feathered wings; the figures of St. Peter and St. Paul remain untouched, but are overshadowed by new canopies. Mr. George A. Frampton, A.R.A., has been the sculptor. The more expensive work of repairing the flying buttresses, which was not originally contemplated, is still proceeding, and will, it is expected, bring the total cost to between £5,000 and £6,000.

PARLIAMENTARY NOTES.

DRAWINGS RECEIVED,—"Ophiu," "Quecus,"

OF THE

The South Stoneham Rural District Council having applied to the Local Government Board for approval of the proposed construction of a special drainage district to comprise parts of the parishes of North Stoneham and South Stoneham, and for sanction to borrow £30,000 for purposes of sewerage and sewage disposal for such special drainage district, Inspector R. H. Bicknell, M.Inst.C.E., held an inquiry at the Philharmonic Hall, Southampton on Tuesday week.

CHIPS

New Board schools erected at Nenthead, near Newcastle-on-Tyne, were opened last week. The cost of the schools and master's house has been about £2,500. Accommodation is provided for 180 children. Mr. T. E. Davidson, of Newcastle, has acted as architect.

LEGAL INTELLIGENCE.

WATFORD BOARD OF GUARDIANS.—At the meeting of the Watford Board of Guardians, Mr. C. P. Ayres, of that town, for proposed nurses' home. The foundation-stones of a new Wesleyan chapel at Butterwick were laid on Tuesday in last week. The new structure, which is to cost over £500, will seat 150 people. The contractor is Mr. Jas. Richardson Leake, and the architect Mr. W. Greenfield, Boston, Lincs.

THE LONDON BUILDING ACT.—On Monday, at the London Building Act, Messrs. Bell and Co., Aldgate-avenue, were summoned, at the instance of the London County Council, for neglecting to comply with a notice requiring them to set back the boundary fence of the forecourt of some premises in Teather-street, Camberwell. Mr. T. Chilvers, from the Solicitor's department of the Council, said the defendants erected around the forecourt of the premises a fence which was less than the distance prescribed by the London Building Act from the outer edge of the roadway. That fence, they were served with a notice requiring them to set back. That they had failed to do. Mr. Philip Conway, for the defence, elicited in cross-examination that the adjoining houses had forecourt fences. The magistrate pointed out that that did not affect the question. This was the process—he admitted that it was a horribly cumbersome one—by which the London Building Act widened the streets. The defendants having given an undertaking to remove the fence, a penalty of 40s., and 42s. costs, was imposed.

CHIPS.

The Watford Board of Guardians have adopted plans by Mr. C. P. Ayres, of that town, for proposed nurses' home.

The foundation-stones of a new Wesleyan chapel at Butterwick were laid on Tuesday in last week. The new structure, which is to cost over £500, will seat 150 people. The contractor is Mr. Jas. Richardson Leake, and the architect Mr. W. Greenfield, Boston, Lincs.

Mr. W. O. E. Meade-King, in inspection under the Local Government Board, has held an inquiry at Littleborough into the urban district council's application to borrow £13,400 for works of private street improvement, £1,440 for sewerage, and £375 for the diversion and covering of a watercourse.

A special service was held at Killaloe Cathedral, on the 10th inst., for a posthumous bell, erected by the church people of the diocese to the memory of the late Right Rev. William Bennett Chester, D.D., Bishop of Killaloe and Kilkennora from 1884 to 1893. It had been found necessary to make certain structural alterations and improvements in the tower, where there had been but one bell hitherto. This work has been carried out at a cost of £1,000. The new portion of the tower is in keeping with the style of the building, a building of the 12th century, Gothic.

The new buildings at Queen Elizabeth's School, Croydon, opened last week, have been erected by Messrs. Marshall and Sons, of that town, from plans by Mr. A. Williams. They are carried out in red brick, with white stone dressings, and contain about 600 seats, a large lecture hall, theatre, with chemical and physical laboratories, each fitted with benches and apparatus for 20 boys, gas and water being laid on for the purpose.

A new Congregational Church was opened at Churchtown, Southport, on Sunday. It replaces one built in 1830, has cost £2,600, and will accommodate 700 persons.

A special meeting of the Lowestoft Town Council has been held to consider the report of the Joint Committee on the question of sea defence. Mr. W. G. Douglas, C.E., who had been called in to advise the committee, recommended the erection of a concrete sea-wall, 1,890 yards in length, in front of the Denes, with four main groynes and 16 subsidiary groynes, the cost of which he estimated at £28,200. This report was, after some discussion, adopted, and Mr. Douglas was appointed engineer, at an inclusive fee of 5 per cent., with 1½ per cent. additional for the preparation of quantities for the works.

At the last meeting of the Northwich Brunner Free Library Committee, the difficulties of maintenance, and consequent upon the damage to the building caused by subsidence, was the subject of consideration. The architect reported that builders were averse to tendering because of the peculiar character of the work which was necessary. Under the present Act only 1d. in the pound can be levied for all purposes connected with the library, so that the sinking of the building causes much difficulty. Consideration of the steps to be taken was adjourned.

As the result of the recent extension of the Ripon city boundaries, the corporation made application at a Local Government inquiry held on Friday before Mr. W. O. E. Meade-King for sanction to borrow £5,000 for purposes of sewerage and sewage disposal, and £3,000 for carrying out street improvements. It appeared from the statement made by the town clerk that the three portions added to the city through the extension contained 210 acres, and were at present unprovided with sewerage or sewage disposal works.

A model lodging-house erected in Church-street, Hamilton, by the Model Lodging-House Co., Ltd., is now ready for occupation. The building is three stories in height with basement, the foundations being of stone and the upper portion of brick, rough-cast. One of the features of the dormitories is that each cubicle has a separate window for air and light. It is heated throughout with hot-water pipes, and will accommodate 152 lodgers.

Tiverton Isolation Hospital, which has been erected at a cost of over £3,000, was opened on Saturday.

The new wing of the Poplar Hospital for Accidents, which has been presented by the Drapers' Company, will be opened on Thursday in next week, the 20th inst., by the Bishop of London.

Mr. R. C. Leslie, the marine painter and writer on seafaring subjects, eldest son of the late Mr. C. R. Leslie, R.A., and brother of the present Royal Academician, Mr. G. D. Leslie, died at Maria-place, Southampton, on Tuesday last, aged 75 years.

The opening services in connection with St. Aidan's Presbyterian Church of England took place on Friday. The church, which is in Palatine-road, Manchester, is a building of Ruabon brick, which, together with a school-house, has been erected at a cost of £7,000, from designs prepared by Mr. Henry Lord, architect, of Manchester. Accommodation is provided in the church for 500 worshippers.

Mr. M. K. North held a Local Government Board inquiry at the Infant Schools, Aylesford, on Thursday in last week, into an application of the Malling Rural District Council to borrow £10,200 for the Aylesford and £3,125 for the Burham sewage disposal works. Professor H. Robinson, the engineer, explained the plans.

On Thursday last the first sod was turned of a large estate of 27 acres at Wimbledon now known as the Polytechnic Recreation Grounds. The estate has been taken up by a building syndicate, who will make the roads and develop the whole of the estate themselves. The directors have appointed Mr. J. W. Start, F.S.I., of 54, New Broad-street and Colchester, as their surveyor.

The scheme of electric tramways for Newcastle-on-Tyne is causing much perturbation and annoyance, both within and without the council, and a financial statement has been demanded from the committee, it being broadly declared, and not denied, that the original estimate of £400,000 had mounted up to a million of money. The statement was presented in a week, and the City Council carried a resolution in disgust at the condition of the streets, to allow no more breaking-up of the thoroughfares until the contractors finish the work in hand. There is no public tramway or bus service now in the city.

A monument erected by public subscription to the memory of Eugene Spuller, Gambetta's co-worker, was unveiled in the Père Lachaise Cemetery, Paris, on Wednesday. The memorial, the work of the sculptor Gasp, consists of a tall fluted stone column surmounted by a bust of Spuller. At the foot of the monument is a female figure depicting national education, who is protecting and instructing a child.

WATER SUPPLY AND SANITARY MATTERS.

CARLISLE WATER SUPPLY.—A serious difficulty has arisen with regard to the carrying out of the scheme for a gravitation water supply for Carlisle. When the scheme was adopted four years ago the estimate of the total cost by the engineer, Mr. Newton, was £129,000, and that of Mr. Eaton, London, who was called in as a consulting engineer, £150,000. Tenders for the construction of the reservoir at Castlecarrock, in Geltsdale, and the laying of the pipes from that place to Carlisle, have been sent in. The engineer's estimate for that part of the scheme was £88,000, but the lowest tender for it amounts to £113,000, or £25,000 more than was calculated upon, and the highest tender is £141,000, or £53,000 more. There are other two contracts to be tendered for, and the tenders for these also are expected to be so much in excess of the estimate that it is feared that the total cost of the scheme, when completed, will be little short of £200,000. The subject was discussed at great length at the meeting of the city council on Tuesday, and it was eventually agreed to take no action until the committee has had an opportunity of considering the matter with Mr. Eaton, the consulting engineer.

WISETON, DONCASTER.—A scheme of main sewerage and sewage disposal, prepared by Messrs. D. Balfour and Son, of London and Newcastle-on-Tyne, has been approved, and an immediate start is to be made with the work. The method of sewage disposal consists in the treatment in self-acting bacterial tanks, the effluent from which will discharge into the adjoining watercourse.

The Liverpool City Council adopted at the last meeting the agreement with the Mersey Docks Board with respect to an exchange of land consequent on the George's Dock improvement.

Mr. Arthur Cates, of 12, York-terrace, Regent's Park, architect, who died on May 15 last, aged 72 years, leaving personal estate of the net value of £174,064 18s. 11d., bequeathed £1,500 to the Royal Institute of British Architects for an "Arthur Cates Prize," £1,500 to the Architects' Benevolent Society, £500 to the Benevolent Fund of the Surveyors' Institution, and £500 to the Charitable Fund of the Surveyors' Club.

The Wesleyan Chapel Committee has sanctioned the erection of 30 new places of worship in various parts of the country at an estimated expenditure of £72,500. One of these new cases is the Seaman's Home, &c., at Poplar, the outlay on which is £13,600.

On Friday the Archbishop of Canterbury dedicated and preached from the memorial open-air pulpit which has been erected at the south-west corner of Spitalfields parish church, in commemoration of the devoted labours of the late Dr. Billing, Bishop of Bedford. The pulpit, which is of Portland stone, has been designed by Mr. Alfred Cox in harmony with the Classic style of the church. It occupies an area of 16ft. by 9ft., and is capable of accommodating both the preacher and a choir of twenty voices.

The statue of Queen Victoria erected in the centre of Dunn-square, Paisley, was unveiled on Tuesday. The statue, a standing figure, is of bronze, and is placed on a pedestal of polished Peterhead granite, which is appropriately inscribed. The total height from base to crown is 13ft. 10in. The sculptor is Mr. Francis J. Williamson, R.B.A., London, where the original in marble is situated. The statue shows the Queen as at the date of the Diamond Jubilee, attired in full state regalia.

The new chapel which has recently been erected at the Cowley Poor-law School, Oxford, was dedicated on May 24. The chapel, the designs for which were prepared by Mr. W. H. Castle, of Oxford, the city estates' surveyor, is situated on the south-west side of the school, and is 43ft. by 22ft. The accommodation provided is for 175 children, and, if necessary at a future date, it may be enlarged by the addition of a chancel. The building is erected with local stone, similar to that used for the school, the dressings being of Bath stone. The style is Early English.

The Manchester City Council wish to purchase for the townspeople Heaton Park, the seat of the Earl of Wilton, but a difficulty has arisen as to the price to be paid. The trustees of the Wilton Estate ask £230,000 for the property, but after taking expert advice the Park Committee of the corporation offer only £190,000. At the last meeting of the council it was proposed to increase this offer to £210,000, but by a decisive majority the members rejected it. The vendors of the estate are now at liberty to reopen the negotiations with the corporation.

The dedication of Truro Diocesan Home for Boys, which has just been founded at Helston, took place on Friday. The old vicarage has been adapted for the purpose, and provides an institution in which twenty boys will be accommodated.

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ILLUSTRATIONS.

ROYAL ACADEMY GOLD MEDAL PRIZE DESIGN FOR THE EDUCATIONAL BLOCK OF A PUBLIC SCHOOL.
ST. MATTHEW'S CHURCH, AUCKLAND, N.Z. NEW ZEALAND.
COURTESY, LEAVER, NEW ZEALAND HOUSE, WESTMINSTER.
THE LITTLE SCHOOLS, GROWBURY, DESIGN FOR PUBLIC BATHS AND WASHHOUSES.

Our Illustrations.

ROYAL ACADEMY GOLD MEDAL PRIZE DESIGN FOR THE EDUCATIONAL BLOCK OF A PUBLIC SCHOOL.

This design embodies as far as possible the everyday requirements for the educational block of a public school, at the same time keeping to the required arrangements set forth in the conditions laid down by the Council of the Royal Academy of Arts. It is true that I have added to them, in art school, laboratory, museum, and library; the two former because I consider that they are essential for the education of the present day, and the latter for ready reference in connection with their studies. Besides these reasons, I could not contrive, without breaking away entirely from the conditions, of devising a symmetrical pile of buildings. The accommodation, which I think the accompanying plans will explain, is as follows: On the ground floor, immediately behind the entrance-hall, is the assembly and examination hall, provided with platform and organ for concerts or other musical festivals, and at the other end a visitors' gallery, accessible by means of the staircase to the left of the principal doorway. Surrounding this hall, and as contiguous as it was possible to make them, are the class- and retiring-rooms for masters, so placed as to keep the pupils under their observation; and near to the library is the prefect's common room, for a like purpose. To the right of the entrance-hall is the chapel, providing accommodation for 260 persons, with an ante-chapel, over which is the organ loft. The cloak-room is placed so that it may be convenient for students, both when attending school and Sunday service. To the left of the entrance-hall are the library, museum, and drawing-school, the latter having a north-east light. On the first floor above the former are the chemical laboratories and class-room approached by the stairs in the corner, and cut off from the other part of the building to prevent the fumes entering the corridors or class-rooms, and causing annoyance to the occupants. In the tower above the hall are provided a governors' board-room, clock, and tank-room. The whole, as may be seen, is so connected by corridors that the student, once within the doors, need not leave the building, except for the latrines, which are placed in a detached building at the rear of the great hall.

H. C. REID HIDE.

ST. MATTHEW'S CHURCH, AUCKLAND, NEW ZEALAND.

This church, which we illustrate from the drawing now at the Royal Academy, will occupy a conspicuous position in the city of Auckland, at the top of a ridge nearly 100ft. above the level of the harbour. It will consist of a nave 30ft. wide, with double aisles on either side; a chancel 25ft. wide and 50ft. long, with an ambulatory or processional

passage 4ft. wide surrounding it, and both eastern and western transepts. The tower, which is of lofty proportions and crowned with a stone spire rising to a height of 250ft. from the ground, is placed on the north side of the church at the east end of the north aisle. An apse on the east side of the tower forms the sanctuary of the morning chapel. The organ will occupy a chamber on the south side of the chancel eastward of the south transept. The chief entrance will be from Hobson street at the west end of the church, through two porches provided with external and internal doors. There are separate doors for entrance and exit. Between the western porches is a commodious baptistery. A western gallery is placed over the baptistery and western lobbies. As the ground falls considerably towards the east, it has been found convenient to arrange the vestries under the eastern portion of the building. These will consist of a spacious clergy vestry and separate room for the churchwardens, for the members of the ladies' choir, and for the men and boys. A door from the churchyard will give access to the vestries from the outside, and the approach to the church is by a staircase leading into a narrow aisle on the north side of the chancel. The walls of the church will be faced inside and out with dressed stone. The chancel will be groined in stone, the height to the ridge from the nave floor being 48ft. Stone groining will also be used in the morning chapel, baptistery, and nave aisles, but the nave itself will have an open-timber roof supported on lofty stone transverse arches springing from stone shafts rising from the ground. The height from the nave floor to the ridge of the nave roof will be 70ft., the external length of the church 160ft., and the greatest width 104ft. The church, including the western gallery, is calculated to seat 1,200 persons. The architect is Mr. Frank L. Pearson, of 12, Mansfield-street, W.

SELECTED DESIGN FOR THE NEW POLICE COURTS, FIRE STATION, ETC., BLACKBURN.

The view of this design was illustrated in our issue for May 17 last. The work is the conjoint production of Messrs. Briggs and Wolstenholme, of Liverpool and Blackburn, and Messrs. Stones and Stones, of Blackburn, and is the one placed first in the recent limited competition, in which two local, one Manchester, and three London firms were invited to submit schemes. We now give the principal elevations of both buildings. The plan was published with our reproduction of the Royal Academy perspective, as above. The assessor was Mr. A. N. Bromley, F.R.I.B.A., of Nottingham, his report being unanimously adopted by the corporation. The view is taken from the corner of Northgate and Blakey Moor, the separate blocks presenting a characteristic appearance indicating their diverse use, while a pleasing unity is maintained by the group as a whole. One of the distinctive features in this plan is the separate building in the rear of the police-courts, in which are placed the parade room with mess-room, reading-room, recreation-room, &c., over, connected by a covered way on the lower ground floor with the charge office, and on the upper ground floor by a bridge across police yard, giving the chief constable direct communication from his department, and at the same time supervision of all going on in the police and drill yards, the chief constable being the superintendent of the fire brigade. The fire engine house is flanked by the deputy superintendent and chief officers' houses, the stabling being in the rear and the whole of the workshops and stores conveniently grouped around the covered shed placed between the gateway for returning steamers and the engine-house. The firemen's dwellings are to be in Duke-street, leaving a large open space for drill purposes in the centre of the site. The buildings are to be faced with Accrington bricks, with stone dressings, and covered with Welsh green slates, the cupolas being covered with copper. The estimated cost is a little over £40,000.

NEW ZEALAND HOUSE, PIMLICO, S.W.

The building now in course of construction at Moreton-street, Pimlico, is intended for the housing of ladies with very limited means. The lease of the existing establishment in South-crescent, Bedford-square, having nearly expired, a small company has been formed to erect and equip the new building, among the members being Lady Meath, Mrs. Hopkinson, Lady Tate, and Lady Kelvin. The site was chosen on account of its central position, being equally accessible

for ladies engaged in the various parts of London. The lower ground floor consists of a large dining-hall capable of seating 90 persons, with servant's quarters and the usual domestic offices. On the ground floor the offices and rooms for the lady superintendent (Miss Lindsey), whilst the wings are divided into private bedrooms and cubicles for the residents. On the first floor, facing Moreton-street, are three large sitting-rooms, and the remainder of this floor, together with the two upper ones, are occupied by sleeping apartments for residents. Altogether the establishment provides accommodation for 89 ladies, 40 in private bedrooms, and 49 in cubicles. The materials are stock bricks with red brick facings to the three frontages, and stone dressings. The contractors are Messrs. Gough and Co., of Hendon, whose estimate was accepted at the sum of £11,384, whilst among the sub-contractors are Messrs. Mark Fawcett and Co., for floors and steelwork. The architect is Mr. R. Stephen Ayling, F.R.I.B.A., of Westminster, and the quantity surveyor Mr. Henry Riley, of Victoria-street.

PROPOSED BRITISH SCHOOL.

This building, illustrated from the drawing now at the Royal Academy, has been designed to accommodate 420 children, but at present only a portion of the scheme has been carried out—viz., the central hall and four of the classrooms, with the necessary cloak-room accommodation, leaving the babies' room, teachers' room, and schoolroom to be erected at a later date. The main feature of the plan is the central hall, which is a well-lit room, 64ft. by 30ft. The building, erected by Messrs. J. Long and Sons, of Bath, has cost £3,500. It is of sand faced bricks, with Bath stone dressings, and the roof is covered with slates. The architects were Messrs. Silcock and Reay, of Bath.

"BUILDING NEWS" DESIGNING CLUB. A BOOK OF PUBLIC BUILDINGS. A GENERAL HOSPITAL.

(For the review of these competitions see p. 790.)

CHIPS.

The new Pathological Institute at the London Hospital will be formally opened by Sir Henry E. Roscoe, Vice-Chancellor of the University of London, on Wednesday, July 10, at 3 p.m.

On Saturday afternoon Lady Willox laid the memorial-stone of a new mission-hall, which is being erected in Prince Edwin-street in connection with St. Ambrose Church, Everton, Liverpool. The hall has a measurement of 69ft. by 35ft. in the clear, and with classrooms will accommodate 700 persons.

Mr. R. H. Bicknell, M.Inst.C.E., an inspector under the Local Government Board, held an inquiry at the Audit House, Southampton, on Wednesday week, relative to an application of the town council for approval of a modification of their scheme for providing accommodation for persons of the working class under the Southampton (Housing of the Working Classes) order, 1895, and for sanction to borrow £600 for works of sewerage.

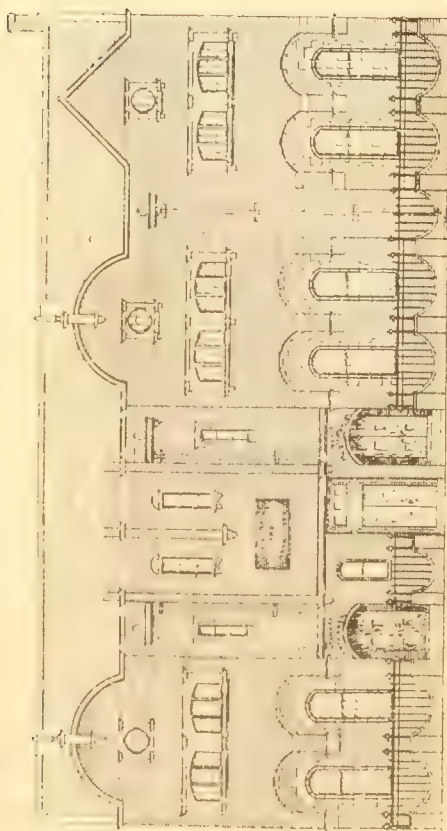
A combination of the leading stained-glass manufacturers of the United States is proposed to be capitalised at 5,000,000dol., the object being to bring the stained-glass manufacturers under a single management, eliminate competition in selling, and reduce the cost of manufacture.

At the last meeting of the Leeds City Council, the library committee were authorised to proceed with the erection of branch library premises at the junction of Nineveh-road and Marshall-street, Holbeck, in accordance with the plans of Mr. William Bakewell, of Leeds, at an estimated cost of £3,660; and the town clerk was instructed to apply to the Local Government Board for their sanction to the borrowing of the money, and also of £692 for the purchase of the land, and £1,000, the estimated cost of furniture and fittings. At the same time, the salary of Mr. Thomas Hewson, jun., general assistant in the city engineer's office, was increased from £250 to £300 per annum.

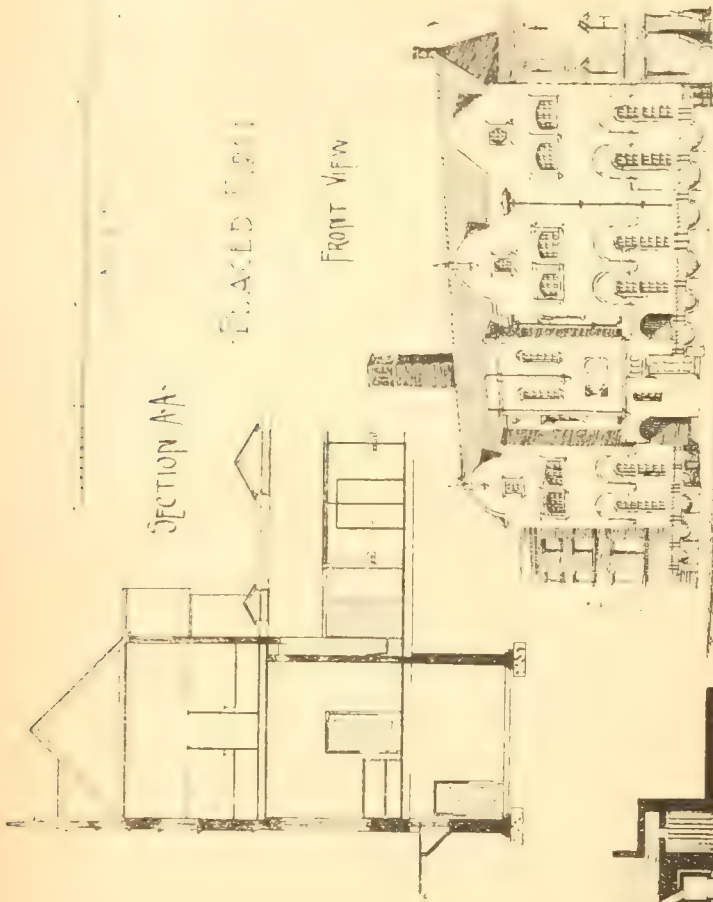
The estate of the late Mr. Valentine Barker, of Rose Cottage, Mirfield, partner in the firm of Barker and Clough, joiners and builders, who died in March last, is returned at £7,930, the net personal value being £3,796. The sole executor is John Barker, of Harrogate, architect and surveyor.

On Tuesday week a Roman Catholic chapel, built to replace an iron structure, was opened on the Hartford-road, Huntingdon. It is of brick and stone in the Romanesque style, and cost over £1,000. Mr. S. Croot, of Brampton, is the architect; Mr. M. Allen having executed the building contract, Mr. J. Baxter the stonework, and Messrs. Porter and Co., of London, the marble work.

A Plan of Public Bath & Washhouses
By 1901.

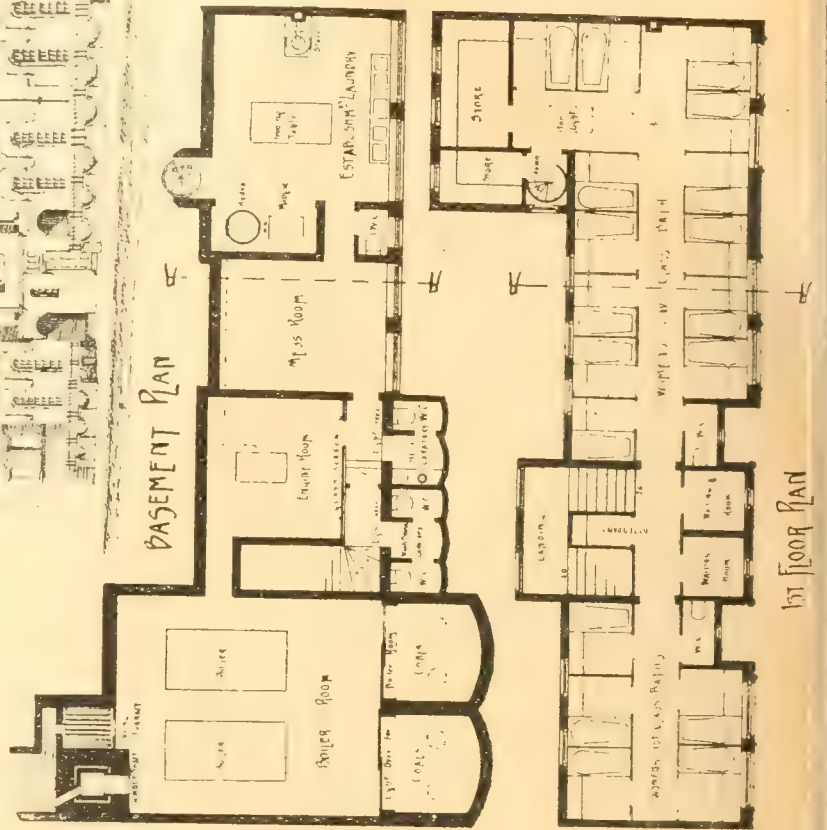


FRONT ELEVATION.



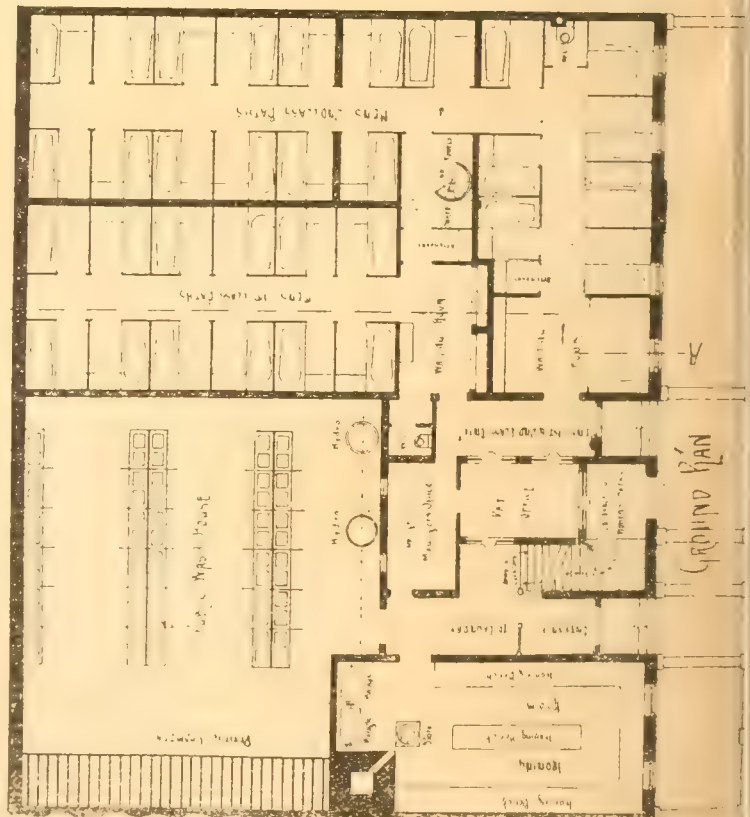
SECTION AA.

FRONT VIEW



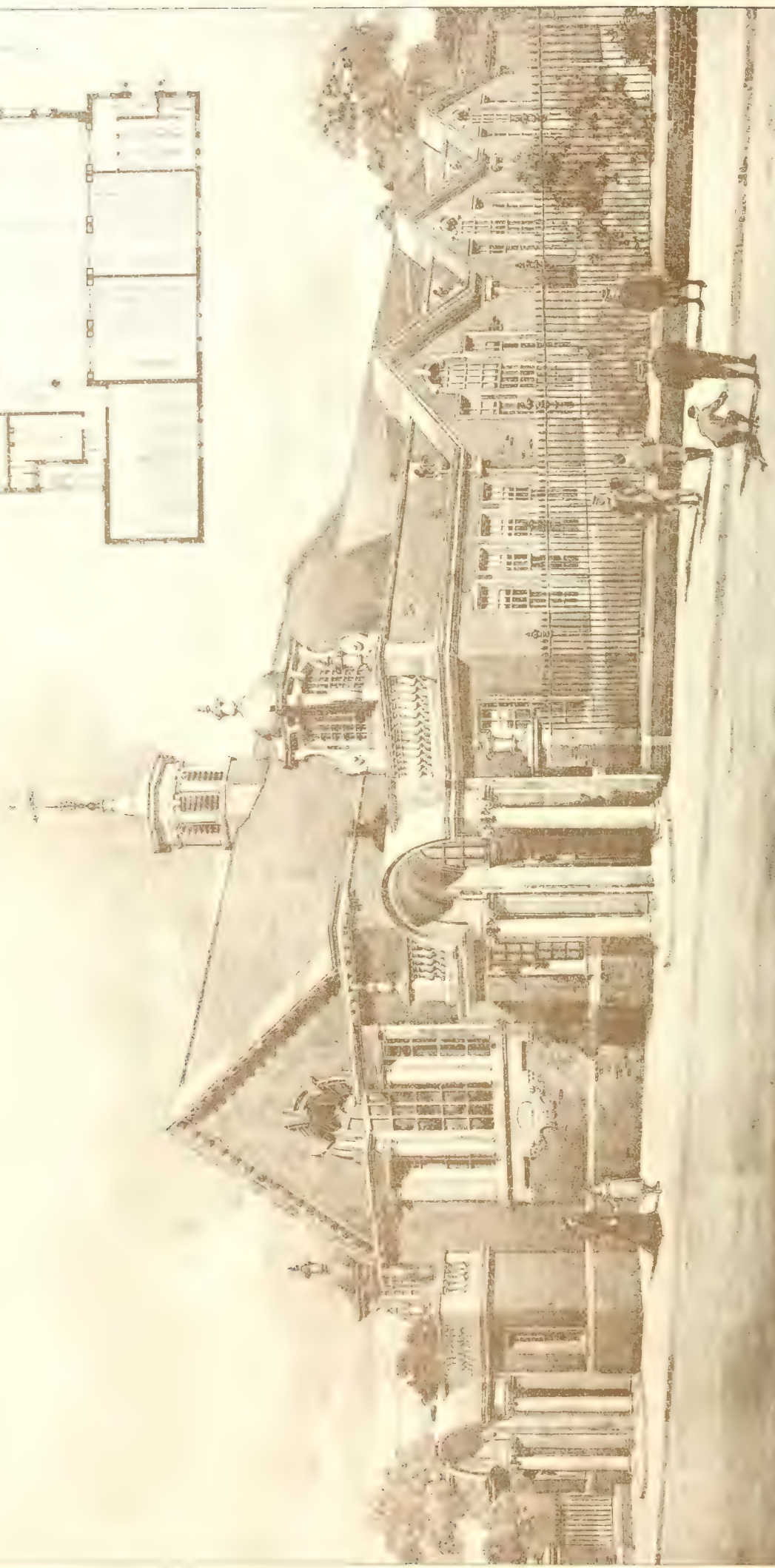
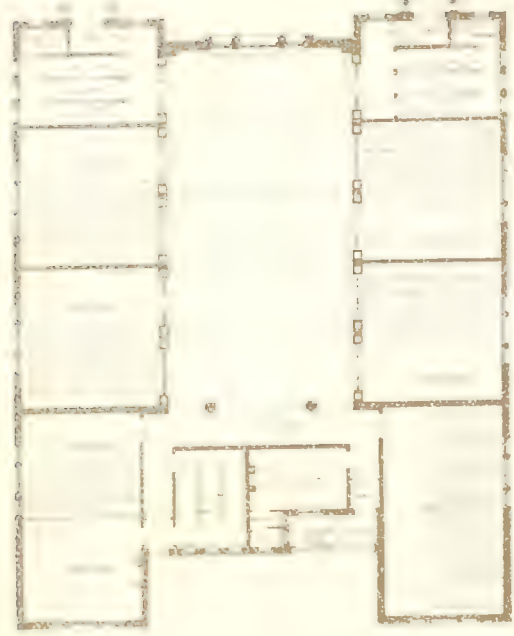
BASEMENT PLAN

1st floor plan



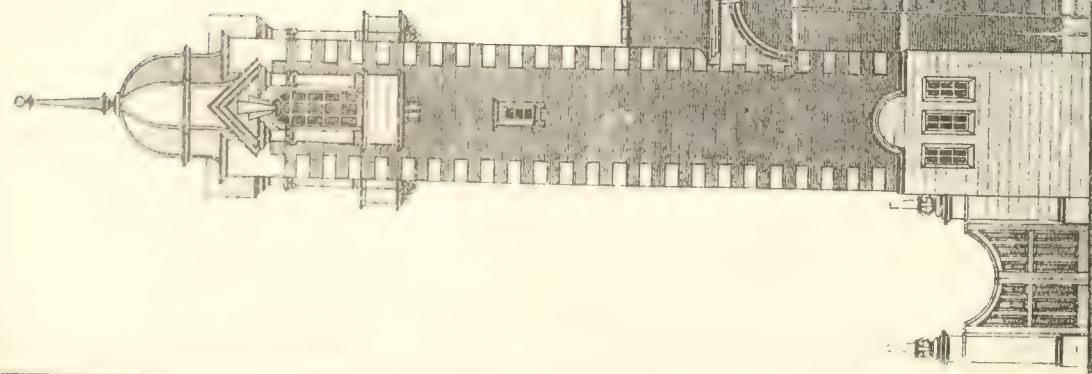
GROUND PLAN

PHOTOGRAPH BY J. H. COOPER

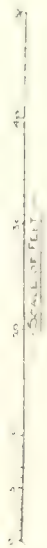


BRITISH SCHOOLS TROWBRIDGE. SULLO RAMPEN ARCHITECTS.

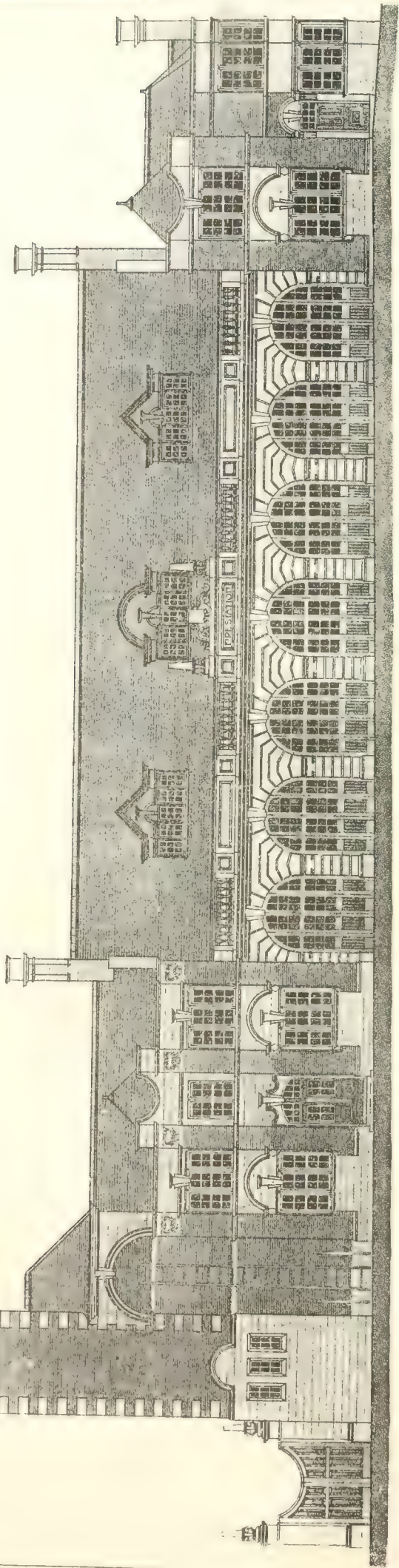
Copyright 1907 by J. M. H. H. Co.



Selected Design of a Fire Station and Northgate



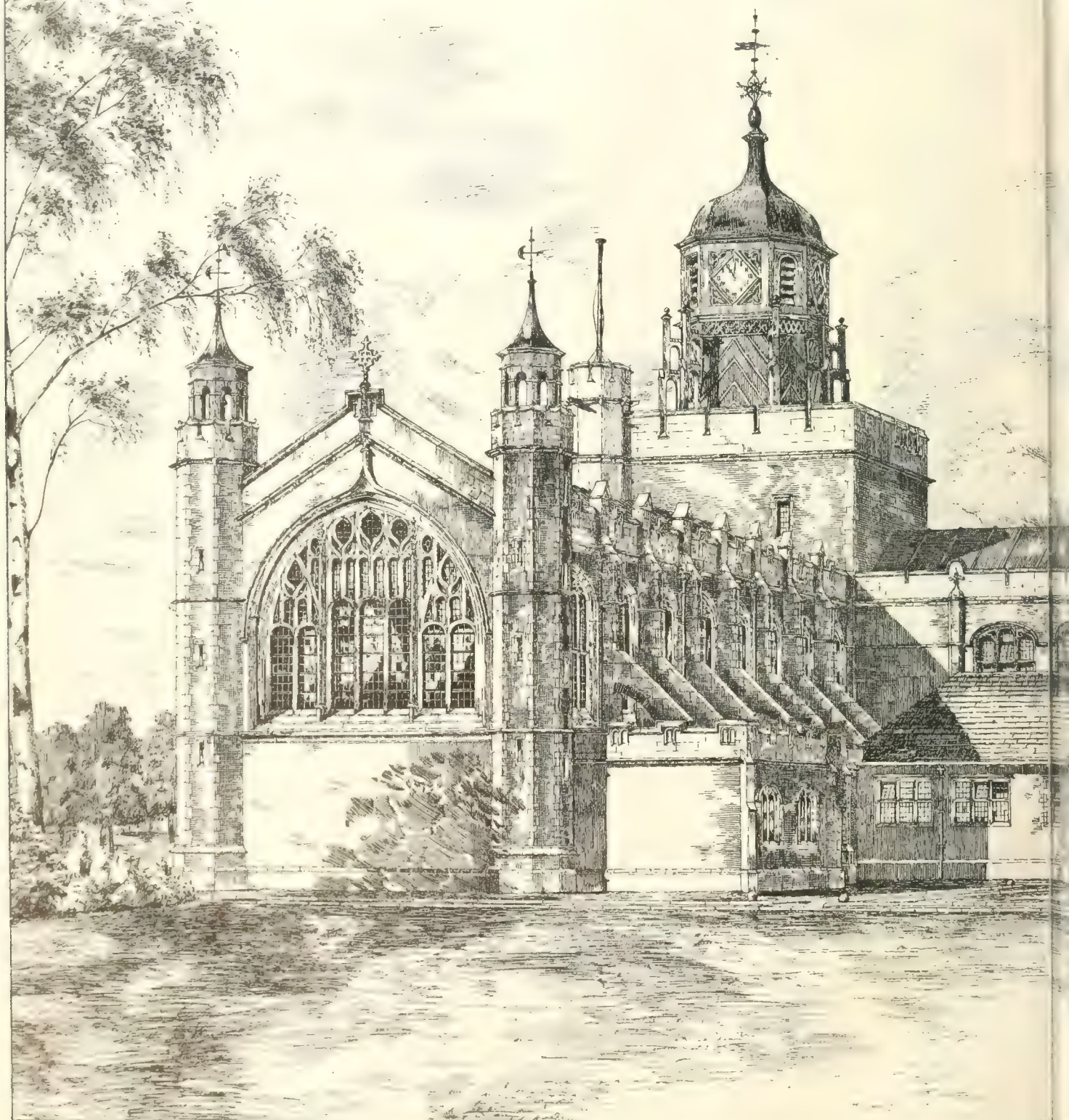
DESIGNED BY
JOINT ARCHITECTS
STANLEY & JONES
BACKEWELL



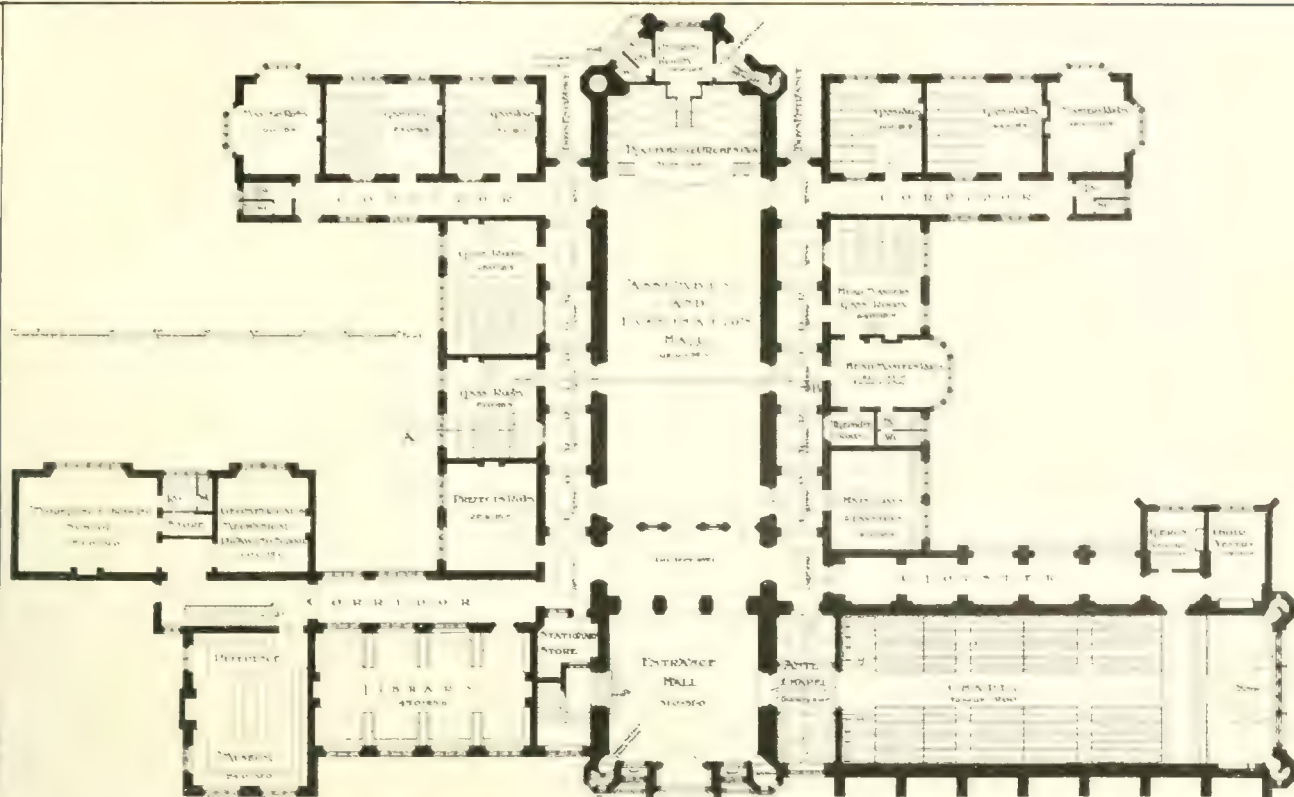
--- ELEVATION OF FIRE STATION TO NORTHGATE ---

SELECTED DESIGN

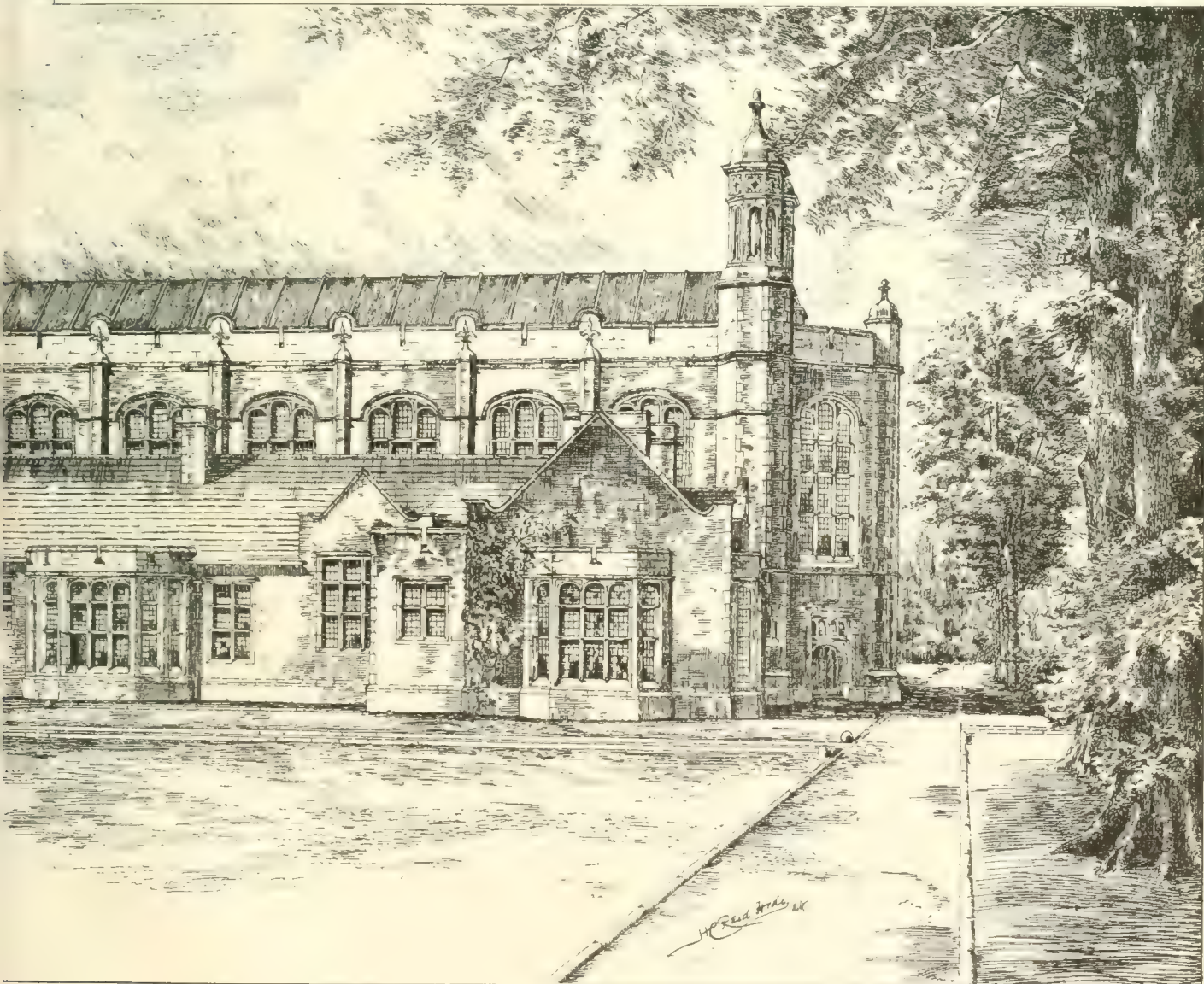
DESIGN
FOR THE
EDUCATIONAL BLOCK
OF A
PUBLIC SCHOOL



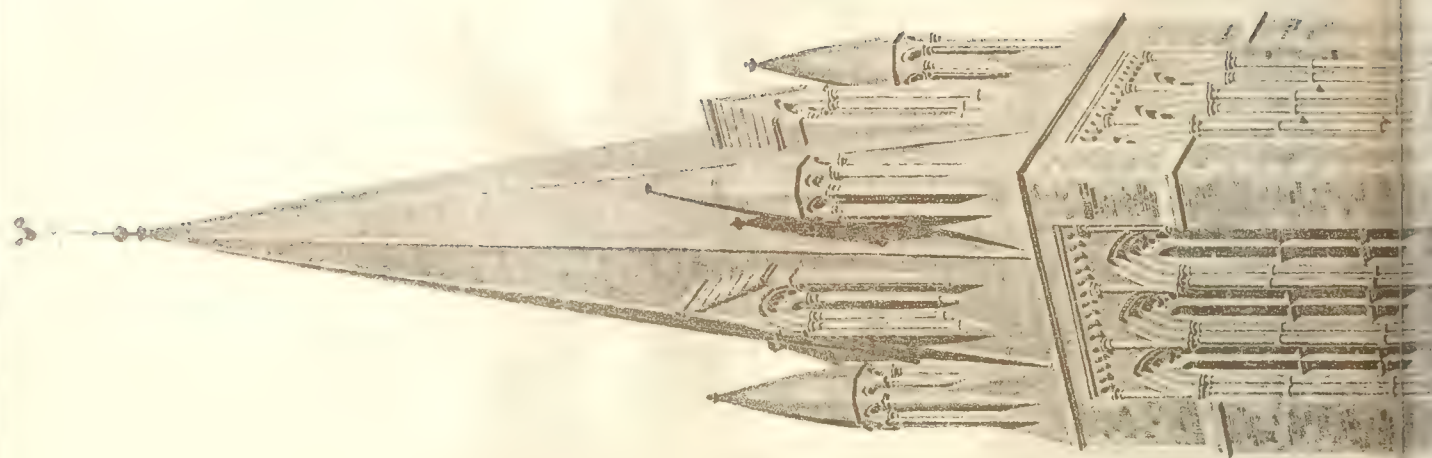
JUNE 7, 1901

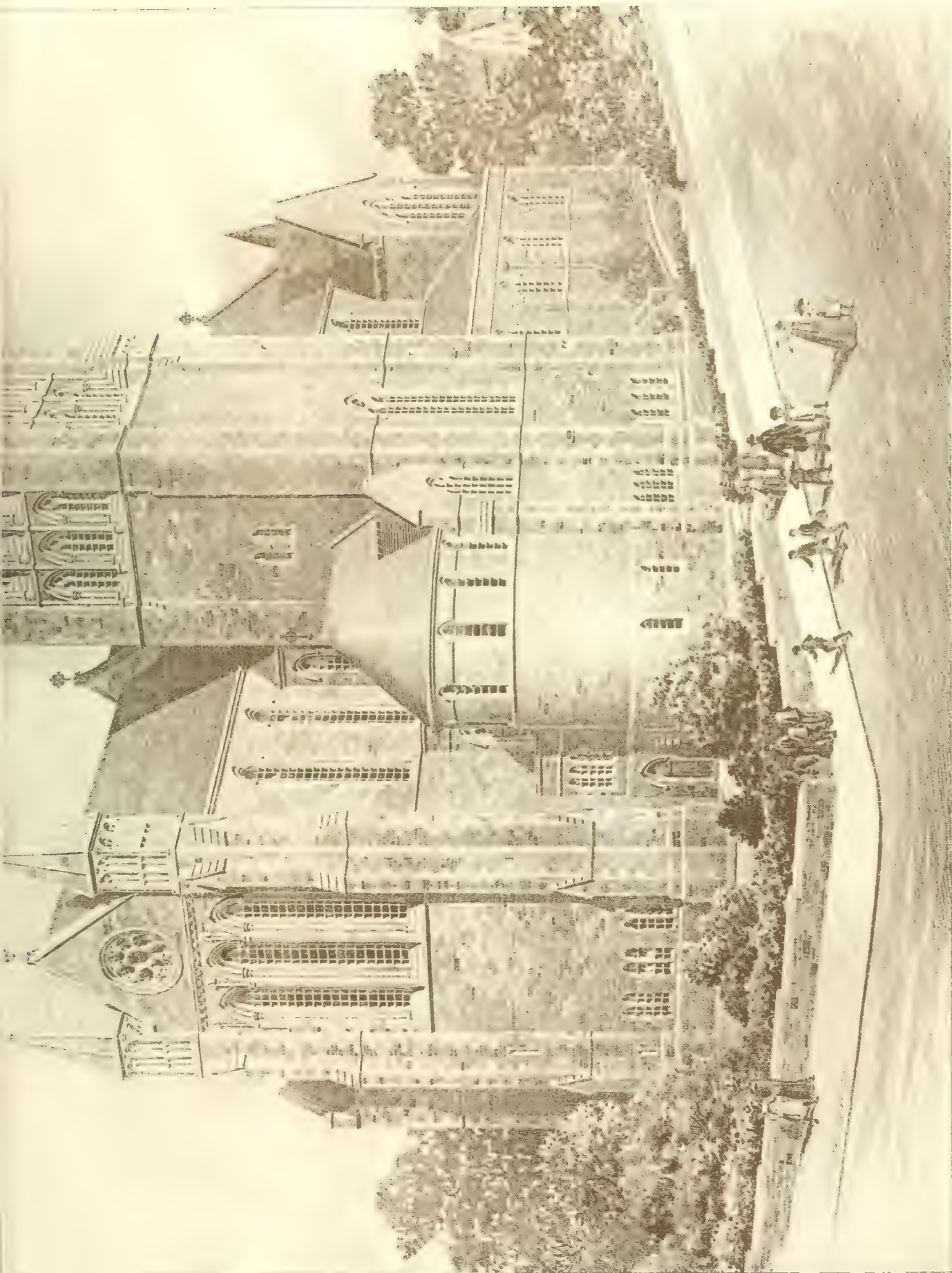


GROUND PLAN



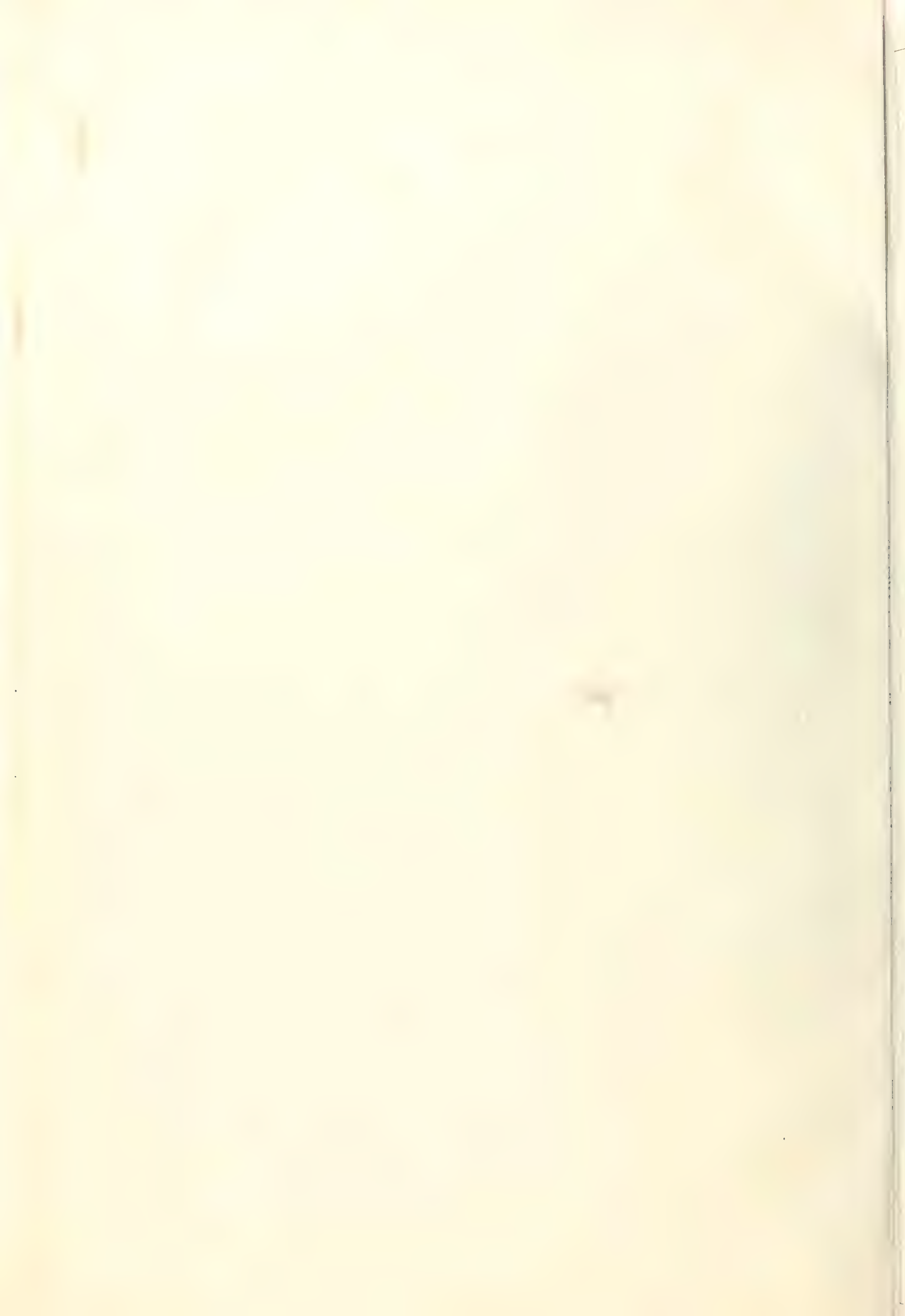




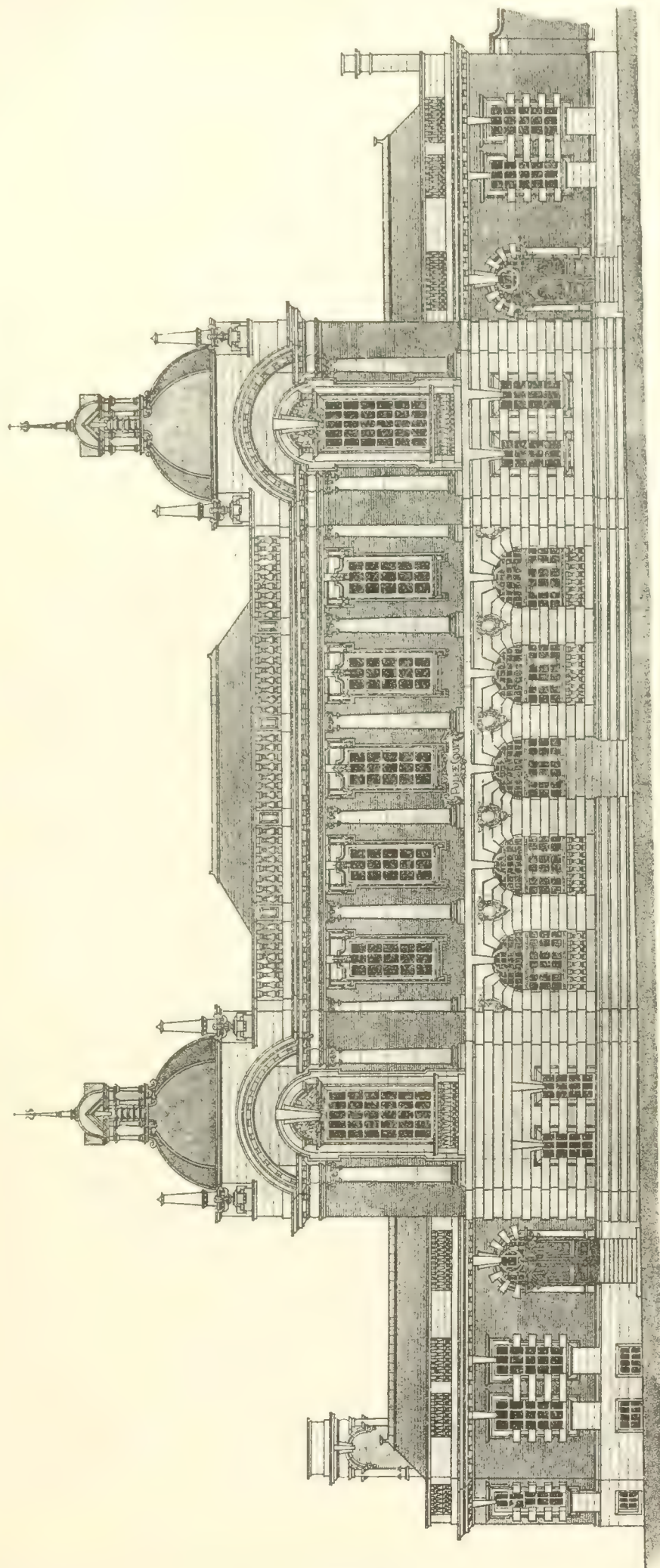


ST MATTHEW'S CHURCH AUCKLAND N Z

Engraved by J. G. Thompson M.A. 1860

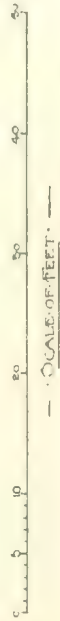


COUNTY BUILDING OFFICE ROYAL ARCHITECTS & JOINT ARCHITECTS



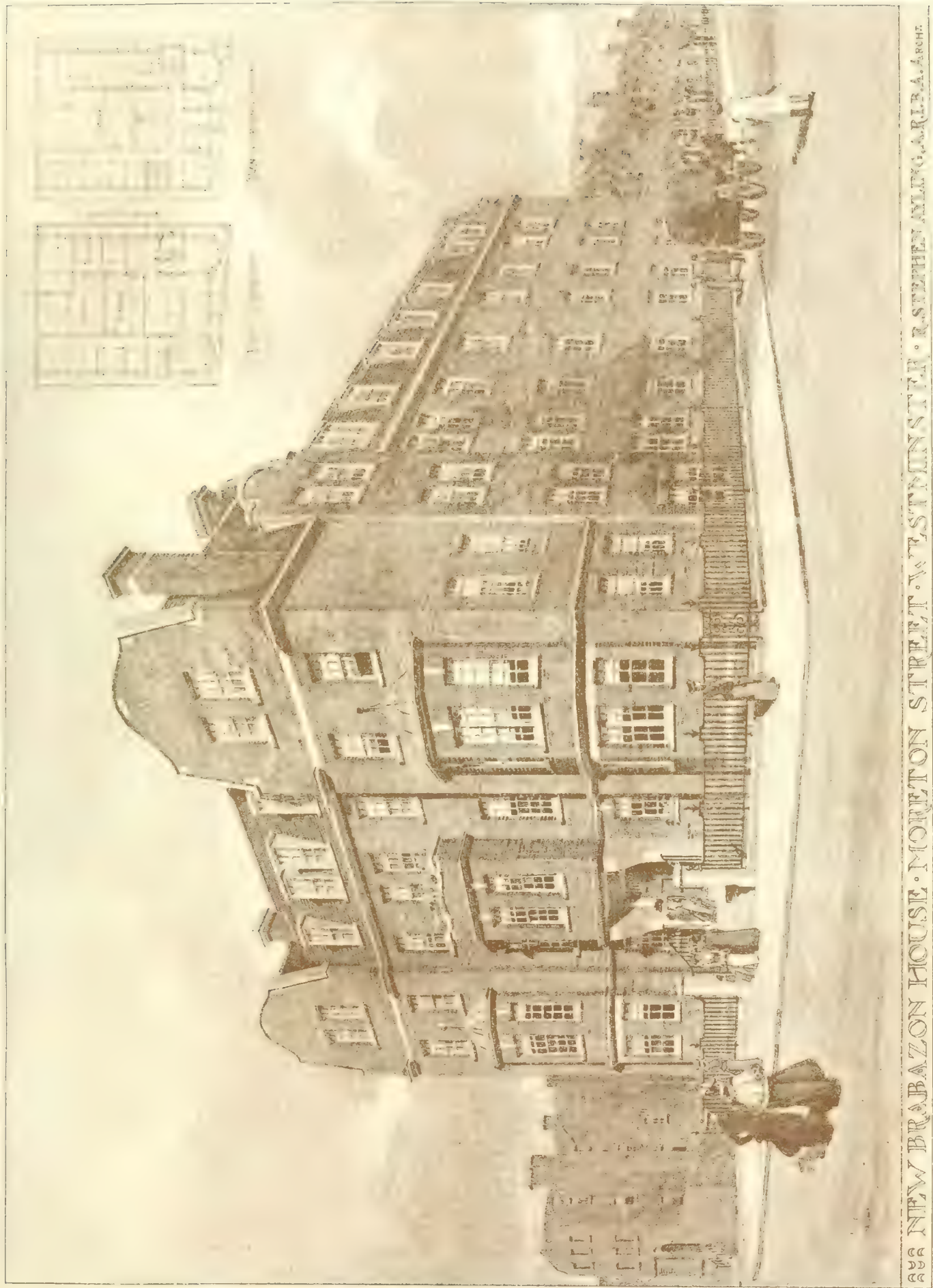
-- ELEVATION OF POLICE COURTS TO NORTHGATE. --

SELECTED DESIGN

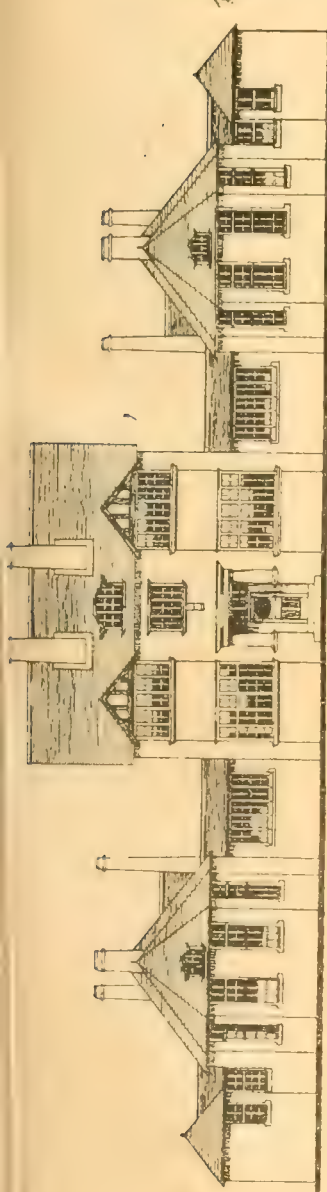


DESIGN & WOLSTENHOLME · STONES & STONES
 JOINT ARCHITECTS · BLACKBURN





NEW BRABAZON HOUSE • MORTON STREET • WESTMINSTER • R. STEPHENSON ARCHT.



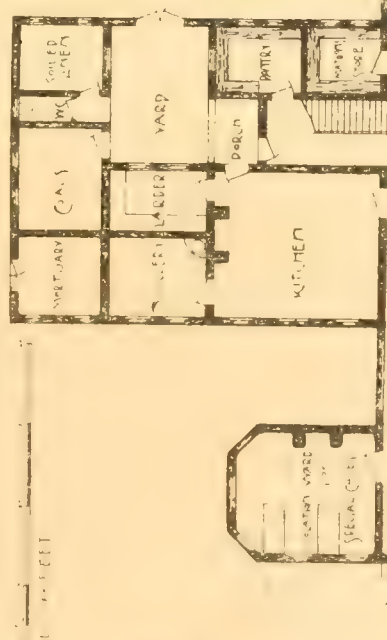
SOUTH-WEST ELEVATION



SKETCH

DESIGN FOR A COTTAGE HOSPITAL. BY "PRIMVS".

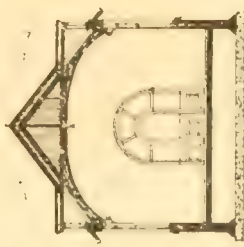
PLACEMENT



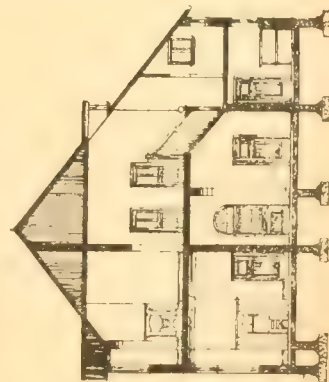
GROUND FLOOR PLAN



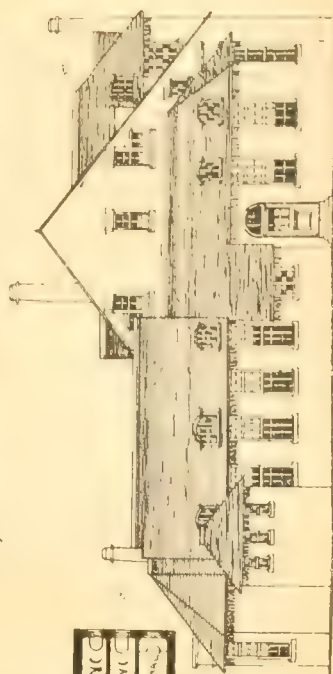
FIRST FLOOR PLAN



SECTION THRU YARD



SECTION



SOUTH EAST ELEVATION

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At the last meeting of the city council of Coventry, Councillor Andrews moved "That a competent architect be consulted in order that he may advise the council as to the repairs to that portion of the ancient St. Mary's Hall buildings above the entrance corridor." He pointed out that certain repairs, which he designated as mere patching-up, are proceeding in the picturesque three-storied portion of St. Mary's Hall—work dating from early in the 15th century—under the direction of the city engineer, and quoted from the report made by Mr. Edward Burgess, eleven years ago as to the careful renovation desirable. Mr. Burgess at that time repaired parts of the hall and added the muniment room and free library to the block of buildings, and it was necessary, Mr. Andrews held, that an architect should be called in to advise on reframing the roof and carrying out the works required, without injury to the original construction. A long discussion took place, but on a division Mr. Andrews's motion was rejected by 22 votes to 8.

MR. ROBERT S. PEABODY, President of the American Institute of Architects, has been engaged in advising with the Secretary of the United States Treasury in relation to the better administration of the Tarsney Act, under which outside architects are invited to compete for projected public buildings. So many misunderstandings have arisen in applying this measure that some of the most eminent architects in the States have already declined invitations to compete for Government work, and others have expressed determination to do the same on occasion. Mr. Peabody and Secretary Gage have now set about removing the conditions which might lead to further misunderstandings. Accordingly, it has been arranged that hereafter the jury of award provided for in the Tarsney Act shall be appointed at the outset : that it shall visit the site of the proposed building, and examine and advise upon the programme of competition, besides having a voice in the selection of the competitors.

The clothing and furnishing premises of Messrs. Chamberlin, Sons, and Co., on Guildhall-hill, Norwich, which were in great part destroyed by fire in August, 1898, have just been entirely reconstructed. Mr. J. Wallis Chapman, of London, and Mr. E. Boardman, of Norwich, have acted as joint architects. The actual work of building was intrusted to Mr. G. E. Hawes, of Norwich. The fitting of the windows was given to Messrs. Sage and Co., London; the electric lighting to Messrs. G. N. C. Mann and Co., of Redwell-street, Norwich, and the heating to Messrs. Richardsons, of Darlington.

W. J. Mann, Clerk, Unionstreet, T. Cambridge	June 24
John Parker, City Engineer, Hartford	.. 30
The Town Clerks, Hamilton, N. B.	.. 30
H. Pierce, Clerk, U. D. C. Office, Kennebec	July 26
The Town Clerk, Town Hall, Manchester	.. 31
James Lewis, Jr., Main Street, Portland	Aug. 1
J. H. Campbell, Town Clerk, Public Buildings, Portland	Sep. 1
John Blakey, Jr., Barbooke-road, Haverley	.. 1

Kingston-Tripney	Properties Committee	T. Cunn Hughes, Town Clerk, Town Hall, Lancaster	June
Knapp, non-Thames—Offices and Workshops	Knapp, Drewett, and Sons, Ltd.	William H. Hope, Architect, Hampton Wick	14
Knapp—Alterations to Farm Offices		Davidson and Garden, 12, Deeside, Aberdeen	14
Knapp—Infants' School, 100 places		Jacob Ross, Architect, Hillsdale, Exeter	14
Knapp—Pulling Down and Rebuilding Farmhouse	Ystradgynlais School Board	John Turren, Wootton Fitzpaine Estate Office, Channmouth	14
Knapp—Houses	A. C. Pass	Davidson and Garden, 12, Deeside, Aberdeen	14
Knapp—Church, Hants—Board Room, &c.	Guardians	T. H. Burton, Architect, Churchchurch	14
Knapp—Repairs, &c., Cemetery Chapel	Southall-Norwood Burial Board	The Visiting Committee, Burial Board, Southall-Norwood	14
Knapp—House		Davidson and Garden, 12, Deeside, Aberdeen	14
Knapp—Police Station	Market Committee	St Samuel Black, Town Clerk, Belfast	14
Knapp—General Hospital	Parish Council	Thomson and Sandilands, Architects, 211, West George's-street, Glasgow	14
Knapp—Hall of Gellan House		Davidson and Garden, 12, Deeside, Aberdeen	14
Knapp—Seven Shops, Newgate and Tenters Streets	H. P. Tyler	T. H. Livesey, Architect, 107, Newgate-street, Bishop Auckland	14
Knapp—South Shields—Offices, West Keppel-street	Newlands and Newlands, Solicitors	J. Wardle Donald, A.R.I.B.A., South Shields	14
Knapp—Alterations to Farm Offices		Davidson and Garden, 12, Deeside, Aberdeen	14
Knapp—New School	School Board	D. Wishart Galloway, Architect, 2, Market-street, Brechin	14
Knapp—Farmhouse		Mortimer and Son, Architects, Lincoln	14
Knapp—Dean Payne Smith Infants' School	Managers	W. J. Jennings, Architects, 4, St. Margaret's-street, Canterbury	14
Knapp—Yn-Mochiant—Village Hall, &c.	Parish Council	T. Brimmer-Smith and Brimmer, Architects, Oswestry	14
Knapp—Extensions to School		The Rev. W. Simpson Davis, The Vicarage, Hangleton	14
Knapp—Two Cottages	A. C. Pass	John Turren, Wootton Fitzpaine Estate Office, Channmouth	14
Knapp—Additions to Farmhouse	Dylas Higher School Board	Davidson and Garden, 12, Deeside, Aberdeen	14
Knapp—Classrooms, &c.		J. Cook Ross, Architect, Church-place, North	14
Knapp—Rebuilding Stables, William-street	J. Preece	J. P. McGrath, C.E., Architect, 28, Carlisle-road, Londonderry	14
Knapp—Two Shops and Offices	Guardians	Edwin Jones, Architect, Porth, Wales	14
Knapp—Infantry Buildings, Kilton Hill	Markets Committee	Herbert C. Simpson, Architect, Court Chambers, Grimsby	14
Knapp—Wooden Offices, &c.		The City Engineer's Office, Municipal Buildings, Leeds	14
Knapp—Additional Wings to St. Joseph's House	Co-operative Society, Ltd.	King and Lister, Architects, 8, Princess-square, Plymouth	14
Knapp—Three Houses, Welbeck-road	West Riding County Council	T. E. Davidson, 14, Neville-street, Newcastle	14
Knapp—Police-Station		J. Vickers Edwards, County Surveyor, Wakefield	14
Knapp—Renovating Primitive Methodist Church	Urban Sanitary Authority	The Rev. G. H. Southall, Vine Villa, Albion-road, Pontypool	14
Knapp—Eighteen Dwelling-Houses, Blackburn-street	Rural District Council	J. Warwick, Town Clerk, Workington	14
Knapp—Labourers' Cottages		B. Manning, Clerk, Workhouse, Rathdrum	14
Knapp—Four Houses	Co-operative Society, Ltd.	Brayshaw and Dixon, Architects, Bowling Old-lane, Bradford	14
Knapp—Eighty Houses	London & North-Western Raily. Co.	Arthur King, Architect, Pinxton	14
Knapp—Electric-Light Station	Electricity Committee	The Estate Offices, Exchange Station, Manchester	14
Knapp—Pumping Station	Urban District Council	John Smith, Churchtown, St. Stephens, Grampound-road, Mawgan	14
Knapp—Woolen Mill		B. Ball, A.M.I.C.E., Borough Engineer, Town Hall, Nelson	14
Knapp—Chimney Shaft, &c.	Guardians	Sydney Howard, Surveyor, Town Hall, Bradford-on-Avon, Wilts	14
Knapp—Additions to Public Library	Corporation	Alfred F. Rhodes, Architect, Chapside, Hocknoldwike	14
Knapp—Seven Houses, Osborne-street	Gasworks Committee	T. E. Knightley, Architect, 106, Cannon-street, E.C.	14
Knapp—Brick Tank (154ft. diam., 35ft. deep)		The Public Works Office, City Chambers, Edinburgh	14
Knapp—Lower Westwick-street	School Board	Wade and Turner, Architects, 10, Pitt-street, Barnsley	14
Knapp—Marsh Green Mixed School, 300 places		The Engineer, Gas Offices, Rotherham	14
Knapp—Crosland Moor Working Men's Club	North-Eastern Railway Co.	Arthur E. Collins, M.I.C.E., City Engineer, Guildhall, Norwich	14
Knapp—Stabling, &c.	President and Governors	Harrington and Ley, 65, Bishopsgate-street Without, E.C.	14
Knapp—Hospital		J. Berry, Architect, 9, Queen-street, Huddersfield	14
Knapp—Additions, &c., to Hospital	The Rev. J. Jones Lewis	William Bell, Architect, York	14
Knapp—Two Semi-Detached Houses	North-Eastern Railway Co.	Rowland Plumble, F.R.I.B.A., 13, Fitzroy-square, W.	14
Knapp—Church and Parish Room		R. L. Roberts, Architect, Aberdeen	14
Knapp—Stabling, &c.	Fembrokeshire Estates Co., Ltd.	E. M. Bruce Vaughan, F.R.I.B.A., Cardiff	14
Knapp—Holywell Green	North Dublin Rural District Council	William Bell, Architect, Central Station, Newcastle-on-Tyne	14
Knapp—Coastguard Officer's House	North-Eastern Railway Co.	The Rev. W. Johnstone, The Manse, Holywell Green, Halifax	14
Knapp—Classroom at National Schools		Jenkinson and White, 1, Princes-street, Westminster, S.W.	14
Knapp—Ten Labourers' Dwellings	Humphrey Perkin's School Governors	The Managers, National Schools, Willington, Co. Durham	14
Knapp—Improvements to Station	W. A. Parker	John O'Neill, Clerk, Board Room, North Brunswick-street, Dublin	14
Knapp—Grammar School	Urban District Council	Wm. Bell, Architect, Central Station, Newcastle-on-Tyne	14
Knapp—Lumley-avenue		Henry J. Snell, Architect, 11, The Crescent, Plymouth	14
Knapp—West-street		Barrowcliff and Allcock, Architects, Mill-street, Loughborough	14
Knapp—Primitive Methodist Church and Schools		Thos. C. Golder, Borough Surveyor, 23, Queen-street, Deal	14
Knapp—Two Semi-Detached Villas		T. E. Davidson, Architect, 68, Aldersgate-street, E.C.	14
Knapp—Wyke-road		R. J. Vivyan, Moorland-road, St. Austell, Cornwall	14
Knapp—Additions to Ardgye House	Guardians	Freame and Light, Gillingham	14
Knapp—Alterations, &c., at Workhouse		W. Reid and Wittet, Architects, Elgin	14
Knapp—Cottage		J. L. Donnelly, Architect, Omagh	14
Knapp—Extensions to Moriah Chapel		George Gow, Tregeothan Office, Truro	14
Knapp—Park-avenue		P. Vivian Jones, P.A.S.I., Architect, Hengoed	14
Knapp—Office, &c.		Owen Pritchard, 15, Cross-street, Oswestry	14
Knapp—Figgery		W. J. Rubery, Post-Office, Canon town	14
Knapp—New Shop, Lyme-road	Mitchell, Toms, and Co., Ltd.	George Gow, Tregeothan Office, Truro	14
Knapp—Hartley-avenue Schools (1,614 children)	School Board	Arthur W. Yeomans, M.S.A., Architect, Chard, Somerset	14
Knapp—Pumping Station, Delph-lane	Corporation	R. L. Curtis, 120, London-wall, Moorgate-street, E.C.	14
Knapp—Alterations to Cottages adjoining Trout Inn	Mitchell, Toms, and Co., Ltd.	James Deas, A.M.I.C.E., Municipal Offices, Warrington	14
Knapp—Repairs to Rectory		Arthur W. Yeomans, M.S.A., Architect, Chard, Somerset	14
Knapp—Additions to 142, St. Owen-street	Thos. Hooper	The Rev. S. Gregory, Landulph Rectory, Hatt, R.S.O.	14
Knapp—St. James-street	Mitchell, Toms, and Co., Ltd.	Ernest G. Davies, M.S.A., 6, St. John-street, Hereford	14
Knapp—Beal Bank	Captain Leighton		

.....	Swash, H. Bann, Architects, Mollard Bank Chambers, Newport
.....	Hussell and Whitsett, 1, Great Dun-Plan, W.C.
.....	V. McInnes, Architect, Cornwallis-street, Barrow-in-Furness
.....	M. Jones and Bonart, Architects, 77, King-street, Manchester
.....	R. W. Cresswell, Architect, West street, Gateshead
.....	H. S. Saxton, Longbushdown, Crumey, Co. Cork
.....	A. Vasey and Hund, Avdlt., 31, Abbey-gate-st., Bury St. Edmund's
.....	F. Lester, Beckwith-road, Ilminster, Salop
.....	C. W. Scott, F.R.S.E., Architect, Colchester
.....	S. Knott and P. Clarkson, 178, Temple Chambers, Tudor-st., E.C.
.....	H. J. G. Hill, Architects, North Park-road, Harrogate
.....	A. G. G. Hill, F.T.A.I., Builders, Milnrow
.....	Arthur Hall, F.R.C.B.A., 22, George-street, Cork
.....	P. J. Adams, 6, The Architects, Worthing, Sussex
.....	T. J. Adams, F.R.C.B.A., 63, Lowther-street, Carlisle
.....	J. Jackson, Glyde Park-road, Dorchester
.....	L. and L. Bowin, Architects, Harrogate
.....	Wm. Griffiths, F.R.S.E., Architect, Falcon Chambers, Llanelly
.....	H. J. Scott, A.R.I.B.A., 1st, Mosley-street, Manchester
.....	G. H. Jones, Benson, Architect, 38, High-street, Rotherham
.....	Arthur A. Tolson, Architect, 4, Prospect-gusset, Harrogate
.....	Wm. Griffiths, F.R.S.E., Architect, Falcon Chambers, Llanelly
.....	T. A. Johnson, F.R.I.B.A., Architect, Abegzavenny
.....	C. Green, T. Perkins, & Palmer, Archts., 25, Cookridge-st., Leeds
.....	Wm. Griffiths, F.R.S.E., Architect, Falcon Chambers, Llanelly
.....	H. Newton and Turner, Architects, Walsall
.....	J. H. Cooper, Architects, Lindun-road, Lincoln
.....	Wm. Griffiths, F.R.S.E., Architect, Falcon Chambers, Llanelly
.....	Dymock Pratt, Architect, Long-row, Nottingham
.....	J. and L. Laid, Borough Surveyors, Town Hall, Bedford
.....	Wm. Griffiths, F.R.S.E., Architect, Falcon Chambers, Llanelly
.....	E. B. Bebbington, A.R.I.B.A., 15, Copper-street, Manchester
.....	H. J. Price, A.R.I.B.A., Architect, 24, Low-pavement, Nottingham
.....	T. A. Johnson, F.R.I.B.A., Methley
.....	Wm. Griffiths, F.R.S.E., Architect, Falcon Chambers, Llanelly
.....	Silvius Deval, F.R.I.B.A., Truro
.....	J. Jameson Green, Architect, 19, South John-street, Liverpool
.....	J. P. Jones, Richards, and Budgen, 18, St. Mary-street, Cardiff
.....	John Shawell Corlier, Surveyor, Windbourne House, Ipswich
.....	T. Taylor Scott, F.R.I.B.A., 63, Lowther-street, Carlisle
.....	Mark L. Kirby, Architect, Hulby, Leeds
.....	W. H. Walley, Architect, Queen-street, Burslem
.....	R. Beaumont and Co., Clayton West, near Huddersfield
.....	H. D. and A. Bown, Architects, Harrogate
.....	20, Commercial-street, Maccles
.....	J. Gurnaw, A.R.I.B.A., Thornton-street, Wrexham
.....	Chas. E. Butcher, Architect, 3, Queen-street, Colchester
.....	A. Jones, 14, Rosebury-street, Abertillery, Mon.
.....	G. Griffiths, 10, Pool-road, Darnall
.....	Jowett Kendall & J. Harper Bakes, Archts., Calverley Chmbrs., Leeds
.....	W. Rowntree Hague, C.E., Prefectrine Works, Langloren
.....	Henry J. Clason, C.E., 22, Church-street, Tamworth
.....	William Bevan, Architect, 12, Buckingham-street, Strand, W.C.
.....	Edgar Down, A.R.I.B.A., 31, High-street, Cardiff
.....	Albert Gorton, M.S.A., 24, The Crescent, Morecambe

Corporation	W. C. C. Hawtayne, 9, Queen-street-place, E.C.	June 15
Electric Traction Committee	H. Collins-Bishop, Bradford 1-place, Wigan	" 18
Electricity and Tramways Committee	W. Alan Fraser, Borough Electrical Engineer, Town Hall, Nelson ..	" 20
Corporation	E. Cross, Borough Electrical Engineer, Rotherham	" 22
Urban District Council	W. C. C. Hawtayne, 9, Queen-street-place, E.C.	" 22
Urban District Council	Gibbings and Baker, 17, Shaftesbury-avenue, W.	" 24
Urban District Council	W. C. C. Hawtayne, 9, Queen-street-place, E.C.	" 25
Town Council	James K. Beck, Borough Electrical Engineer, Abbey Mills, West Ham.	" 26
Health Committee	Pole and Little, Architects, 9, Gray's, Inn-square, W.C.	" 28
City Council	D. Munro, City Electrical Engineer, Exeter	" 28
Borough Council	Kincaid, Waller, and Manville, Engineers, 29, Gt. George-st., S.W.	July 1
Brazilian Government	The Commercial Department of the Foreign Office, Whitehall, S.W.	" 8
Corporation	Robert Hammond, M.I.C.E., 64, Victoria-street, S.W.	" 18

Tottenham District Council	James Smith, Engineer, West-street, Buckingham	June	15
County Council	Thomson and Wright, C.E., 22, Rutland-square, Edinburgh	"	15
School Board	Donald and Tate, Architects, 14, John-street, Worthington	"	15
Urban District Council	James Smith, Engineer, West-street, Buckingham	"	15
Magistrates and Council	The Resident Engineer, De-war-place, Edinburgh	"	17
Great Northern (Ireland) Ry. Co.	The Engineer-in-Chief, Amiens-street Terminus, Dublin	"	17
Board of Management	A. Scott, Architect, Droghda	"	17
Madeley & Brosely Joint Water Com.	M. Stokes, C.E., Severn Villas, Shrewsbury	"	17
Rural District Council	S. G. Gallagher, C.E., Rathdrum	"	17
London County Council	The Engineer's Department, County Hall, Spring-gardens, S.W.	"	18
Local Board of Health	H. Hampton Clerk, Town Clerk, Town Hall, Redditch	"	18
North-Eastern Railway Co.	W. J. Cudworth, Engineer, York	"	19
Borough Council	H. Mair, M.I.C.E., Borough Surveyor, Town Hall, Hammersmith.	"	19
Urban District Council	The Engineer, Electricity Works, East-street, Barking	"	19
Urban District Council	T. B. Luing, Town Clerk, Leith	"	19
Committee of Works of Port	J. Gregson, A.M.I.C.E., Surveyor, Padstham	"	19
Electricity Committee	The Commercial Department, Foreign Office, Whitehall, S.W.	"	19
Old Rural District Council	Kennedy and Jenkin, Engineers, 17, Victoria-street, S.W.	"	20
Gas and Electric Committee	John Frit, C.E., Ballow, via Chesterfield	"	21
Urban District Council	Victor A. H. McEwen, City Electrical Engineer, Belfast	"	21
Rural District Council	J. C. Mellis, M.I.C.E., 264, Gresham House, Old Broad-street, E.C.	"	22
Aylesbury Rural District Council	S. Edmondson, Surveyor, 18, Nicholas-street, Burnley	"	22
Tilham District Council	Guest Luckett, Engineer, 2, Church-street, Aylesbury	"	22
Urban District Council	W. Bindon Platt, Clerk, Witham	"	22
Urban District Council	Statue-macnes S. Lutz-saddling, Revolutonsgard, 16, Copenhagen B.	"	24
Urban District Council	B. Latham, M.I.C.E., Parliament Mansions, S.W.	"	24
Corporation	R. S. Scott, A.M.I.C.E., Surveyor, North-st., Bishop's Stortford	"	25
Town Council	Office of Public Works, 64, Cochrane-street, Glasgow	"	25
Corporation	James K. Black, Boro' Elec. Eng., Abbey Mills, West Ham	"	25
Lancashire and Yorkshire Ry. Co.	T. and C. Hawkley, Civil Engineers, 31, Great George-street, S.W.	"	25
Corporation	The Inspector-General of Immigration, Upper Egypt, Cairo	"	25
Health Committee	The Engineer's Office, Hunt's Bank, Manchester	"	25
Bucklow Union Guardians	W. Foulis, Engineer, 15, John-street, Glasgow	"	26
Corporation	Pole and Little, Architects, 9, Gray's Inn-square, W.C.	"	26
Vicar and Churchwardens	Robert J. McBeath, M.S.A., Birnam House, Sale	"	27
Urban District Council	John Hadden and Son, Architects, High-street, Salisbury	"	27
Northumberland County Council	T. and C. Hawksley, Civil Engineers, 31, Great George-street, S.W.	"	27
Sewage Committee	The Rev. C. Dunkley, The Vicarage, Brewton, Staffs.	"	28
Municipal Government	T. Edgar Fellows, Engineer, Town Hall, Willenhall	"	29
Greenwich Union Guardians	J. A. Bean, County Surveyor, Moot Hall, Newcastle	"	29
Electric Lighting Committee	B. Ball, A.M.I.C.E., Borough Engineer, Nelson	"	30
General and Urban Guardians	The Commercial Department, Foreign Office, Whitehall, S.W.	July	2
Electricity Committee	Thos. Dinwiddie, F.R.I.B.A., Crooms Hill, Greenwich	"	3
London County Council	Robert Hannam, M.I.C.E., 64, Victoria-street, S.W.	"	3
London County Council	Thos. Dinwiddie, F.R.I.B.A., Crooms Hill, Greenwich	"	3
London County Council	W. E. Haining, Chief Engineer, New-street Works, Edinburgh	"	3
New Globe Cement, Chalk, &c., Co.	The Commercial Department, Foreign Office, Whitehall, S.W.	Aug	1
Molyneux, Ltd.	Harold J. Evans, Town Clerk, Wigan	"	19
Landowners	Oswald Brown, M.I.C.E., 32, Victoria-street, Westminster	"	19
Local Board of Health	Joshua E. Hoyle, Secretary, Crossley-street, Halifax	"	19
	The Rev. C. S. Stubbs, Curate in Charge, Carrington, Manchester	"	19
	Jowett Kendall and J. Harper Bakes, Architects, Leeds	"	19
	Togarnah Rees, C.E., Corn Exchange Chambers, Newport, Mon	"	19
	F. Swinburne, Surveyor, Warrington	"	19

FENCING AND WALLS.

Nottingham—Stone Posts & Wire Walls, from Underwood	Public Health Committee	June 15
Upper—Two-rod Iron Fence	The Municipal Council	15
Leeds—Wrought Iron Steel Fencing	City of Leeds Council	16
Harrowgate—Wrought-Iron Fencing	Corporation	17
Manchester—Retaining Wall in Lane	Highway Commission	17
St. Bos's—Walls, &c., Churchyard Extension	Arch. Board Society	17
Longtown—Hurdles, Posts, and Rails	Man. Board of Council	17
Newbury—Wrought-Iron Fencing	Man. Board of Council	17
Leitham—Concrete Boundary Walls, &c.	Leitham Board of Council	18
Salford—Fencing, Drainage, & Retaining Walls	Leitham Board of Council	18
Swansea—Fencing Football Ground	Leitham Board of Council	18

FURNITURE AND FITTINGS.

Swansea—School Furniture	School Board	June 17
Longtown—Fitting-up Show-rooms	Arch. Board Society	18
Edinburgh—Internal Fittings for Victoria School	School Board	22
Swindon—Tables and Fitting Chairs	Corporation	24
Liverpool—Small Ward Tables, &c.	School Board	
Nottingham—Screens at Queen's Work School	School Board	

PAINTING.

Bishop Auckland—Seven Ships	H. P. Tyler	June 17
Dudley—Halsgreen-road and Hart's Hill Schools	School Board	19
Hull—Drying Bridge and Scaffolds	Corporation	19
Carlisle—Ashley-street Schools	School Board	19
Pontnewydd—Primitive Methodist Church	Corporation	17
Redburn—Public Baths	Guardians	17
Knarborough—Workhouse Infirmary	Corporation	18
Presen—Public Market	Corporation	18
Sheffield—Winter-street and Lodge Moss Hospitals	London County Council	18
Woolwich—Free Ferry	Guardians	18
Brighton—Interior of Workhouse	School Board	18
Hull—Fourteen Schools	Guardians	18
Paddington, W.—Infirmary, Harrow-road	School Board	18
Skinfrith—New Jun Board School	Guardians	18
Leeds—Knights of Sewage Works	School Board	18
Potsmouth—Offices, St. Michael's-road	School Board	18
Penge, S.E.—Melvin-road School	General Purposes Committee	18
Nelson—Exterior of Market Hall	Watch Committee	18
Alves—Aldgate House	Town Hall Committee	18
Leeds—Schools	School Board	18
Wakefield—Interior of Workhouse Infirmary	School Board	18
Edinburgh—Schools	School Board	18
Morley—Eleven Houses	General Purposes Committee	18
Morley—Dartmouth Park and Cemetery	Watch Committee	18
Halifax—Nine Houses	Town Hall Committee	18
Leeds—Police Station, Library, &c.	Town Hall Committee	18
Stanton and Newall—Board Schools	Town Hall Committee	18
Manchester—City Police Courts, Minshill-street	Town Hall Committee	18
Golear—St. John's Church	Town Hall Committee	18

PLUMBING AND GLAZING.

Edzell—School	School Board	June 15
Glasgow—General Hospital	Parish Council	15
Gillfoot, Cumberland—Fitting-up Sanitary & Hot-Water System	Wyndham Mining Co., Ltd.	15
Morley—Flower Houses	Wyndham Mining Co., Ltd.	15

ROADS AND STREETS.

Shotley Bridge—Whinstone Block Paving	Benfield Urban District Council	June 15
Dudley—Lime-stone Tar-Paving Playground	School Board	15
Plymouth—Making-up Streets and Lanes	Corporation	17
Leeds—Crompton Road, &c.	Leeds District Council	17
Wolverhampton—Paving Hickman-avenue	Streets Committee	17
Leeds—Barnsley, &c.	Corporation	17
Hendon, N.W.—Improvement Works	Urban District Council	17
Spennymoor—Paving, &c.	Urban District Council	17
Erith—Private Street Works	Urban District Council	17
Aldershot—Paving, &c., York-road	Urban District Council	17
Wolverton—Street Works	Stratford and Wolverton R.D.C.	17
Motherwell—Making-up Street	Urban District Council	18
Walsby—Making-up Roads	Urban District Council	18
Retford—Making-up Delamere-road	Urban District Council	18
Winchmore Hill, N.—Road Repairs	Metropolitan Asylums Board	19
Beverley—Private Works, Union-road	Corporation	20
Wokingham—New Road	Investment Co., Ltd.	21
East Ham—Tar-Paving Bessborough-road School	School Board	24
Shrewsbury—Concrete, Fries, &c.	Improvement Committee	25
Amble—Widening Wynd-street	Urban District Council	25
Tantolow—Street Works	Urban District Council	25
Dartford—Paving, &c., Bullace-lane	Urban District Council	25
Sheffield—Road Widening	Wortley Rural District Council	26
Uttoxeter—Asphalting (350 yards) at National Schools	Uttoxeter Rural District Council	26
South Shields—Roadmaking, &c., Harlem Villa Estate	Uttoxeter Rural District Council	26

SANITARY.

Pentre—Stoneware Pipe Sewers	Rhondda Urban District Council	June 15
Barrow-on-Soar—Sewage Disposal Works	Rural District Council	17
Netherton and Woodside—Sewerage Works	Corporation	17
Stonewort—Sewers, Dymunio-road	Improvement Committee	17
Belfast—Sewering, Paving, &c., New Streets (One Year)	Tending Rural District Council	17
Parkeston—Sewage-Disposal Works	Corporation	17
Lothbury, E.C.—Alterations to Underground Convenience	Urban District Council	18
Aldershot—Sewering and Paving York-road	Urban District Council	18
Leadenhall Market, E.C.—Alterations to Convenience	Corporation	18
Enfield—Sewer	Urban District Council	18
Royal Exchange, E.C.—Alterations to Convenience	Corporation	18
Hove—Sewerage Works	Corporation	18
Bexley Heath—Sewers, &c.	Urban District Council	19
Plymouth—Urinal at Barbican	Corporation	19
Sutton Coldfield—Sewers, &c.	Urban District Council	21
Alford, Lincs—Main Pipe Sewers	Urban District Council	22
Surbiton—Sewer, &c.	Urban District Council	22
Nuneaton—Sewerage Works	Nuneaton and Chilvers Coton U.D.C.	24
Ongar—Sewerage	Rural District Council	24
West End, Southampton—Drainage Works at Workhouse	South Stoneham Union Guardians	24
Walsall—Sewers	Corporation	25
Bury—Drainage, Sanitary Fittings, &c., at Infectious Hospital	Health Committee	25
Swanington—Sewer, &c.	Parish Council	27
Winslow—Sewers, &c.	Rural District Council	27
King's Langley—Sewerage Works	Hemel Hempstead R.D.C.	27
Croydon—Brick Sewer Culverts (1½ mile)	Town Council	2
Enniskillen—Sewerage System	Rural District Council	2
Millom—Sewer Extension	Urban District Council	3
Erdington—Sewerage Works	Urban District Council	3
Buxton—Culvert 160 yards	Urban District Council	3

STEEL AND IRON.

Macclesfield—Mains and Irregulars	Gas Committee	June 15
Amsterdam—Steel Rails (3,600 tons)	South Holland Electric Railway Co.	15
Perth—Cast-Iron Pipes (5,000 yards)	Pertshire County Council	15
Nottingham—Steel Siphon Pipes (860 tons)	City Council	15
Skipton—Roof over Coal Stores	Urban District Council	17
Leeds—Two Entrances, East End Park	Corporation	18
London, E.C.—Rails, &c.	Southern Mahratta Railway Co., Ltd.	18

STORES.

IRON. &c.

	Per ton.	Per ton.
Rail-Iron Lests, Belgian	£6 0 0	to £6 10 0
Rail-Steel Lests, English	9 0 0	" 10 0 0
Wrought-Iron Order Plates	9 0 0	" 9 15 0
Bar Iron, good Staffs.	8 7 6	" 9 7 6
do Lowmoor, Flat, Round, or Square	20 0 0	" 20 0 0
do Wash	5 15 0	" 5 17 6
Bull's Head, Iron		
South Staffs.	7 17 6	" 8 5 0
Best smallish	11 0 0	" 13 10 0
Angles I & 2, T & S.	per ton extra.	
Builders' Hoop Iron, for bonding, &c., £6 15s.		
Builders' Hoop Iron, galvanised,	£15 10s. 0d.	per ton.
trans used Corrugated Sheet Iron	No. 18 to 20	No 22 to 24.
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
Best ditto	£12 5 0	" £12 10 0
	12 15 0	" 13 0 0
	Per ton.	Per ton.
Cast-Iron Columns	£4 0 0	to £9 10 0
Cast-Iron Stanchions	9 0 0	" 9 10 0
Roller-Fencing Wire	10 5 0	" 10 10 0
Roller-Steel Fencing Wire	8 5 0	" 8 15 0
Cast-Iron Castings, galvanised.	9 0 0	" 10 0 0
Cast-Iron Sash Weights	7 5 0	" 8 0 0
Cast Cast-Nails, sin. to 6in.	12 0 0	" 13 0 0
Cast Pig-Bars	11 15 0	" 12 15 0
Pig Nails, Points de Paris		
6 to 7 8 9 10 11 12	13 14 15	B.W.G.
12 13 14 15 16 17	12 9 13 6 14 6	per wt.
Cast-Iron Socket Pipes		
4 in. to 6 in.	26 17 6	to 27 5 0
4 in. to 6 in.	6 15 0	" 7 0 0
6 in. to 8 in.	7 15 0	" 7 0 0
[Coated with composition, 2s. 6d. per ton extra; turned and bored joints, 5s. per ton extra.]		
Pig Iron—	Per ton.	
Cold Blast, Lilleshall	105s. to 110s.	
Hot Blast, ditto	57s. 6d. to 62s. 6d.	

TIMBER.

[illegible]

Cedar, Cuba.....	"	0	0	3	"	0	0	3	½	
" Honduras.....	"	0	0	3	½	"	0	0	3	½
Satinwood.....	"	0	0	10	"	"	0	1	9	"
Walnut, Italian.....	"	0	0	3	"	"	0	7	½	"
" American (logs).....	"	0	2	3	"	"	0	4	6	"
Deals, per St. Petersburg Standard, 120—12½ ft. by 1½ in. by 1½ in. :—										
Quarter, Pine, 1st.....		£24	5	0	to	£29	15	6		
" 2nd.....		16	13	0	"	20	15	0		
" 3rd.....		11	5	0	"	13	15	0		
Canada Spruce, 1st.....		12	10	0	"	14	10	0		
" 2nd and 3rd.....		9	0	0	"	10	5	0		
New Brunswick.....		8	0	0	"	11	0	0		
" 2nd.....		9	0	0	"	9	10	0		
St. Petersburg.....		11	0	0	"	18	5	0		
Swedish.....		11	10	0	"	21	0	0		
Finland.....		10	15	0	"	12	0	0		
White Sea.....		12	10	0	"	22	5	0		
Battens, all sorts.....		5	0	0	"	12	10	0		
Flooring Boards, per square of 1½ in. :—										
1st prepared.....		£0	11	6	"	£0	17	6		
2nd ditto.....		0	10	0	"	0	13	6		
Other qualities.....		0	5	6	"	0	12	6		
Staves, per standard M :—										
U.S. ditto.....		£37	10	0	"	£45	0	0		
Memel, cr. pipe.....		220	0	0	"	230	0	0		
Memel, brack.....		190	0	0	"	200	0	0		

OILS.

Linseed	per tun	£33 0 0	to	£33 5 0
Rapeseed, English pale ..	"	28 15 0	"	29 5 0
Do., brown	"	27 10 0	"	28 0 0
Cottonseed, refined	"	22 12 0	"	23 0 0
Olive, Spanish	"	39 0 0	"	40 0 0
Seed, pale	"	26 0 0	"	26 10 0
Cocoanut, Cochín	"	29 15 0	"	31 0 0
Do., Ceylon	"	26 10 0	"	26 15 0
Palm, Lagos	"	25 0 0	"	25 5 0
Oleine	"	17 5 0	"	19 5 0
Lubricating U.S.	per gal.	0 7 0	"	0 8 0
Petroleum, refined	"	0 0 6½	"	0 0 6½
Tar, Stockholm	per barrel	1 6 0	"	1 6 0
Do., Archangel	"	0 19 6	"	1 0 0
Turpentine, American ..	per tun	37 0 0	"	37 5 0

CHIPS.

The Principal of the Heriot-Watt College, Edinburgh, has framed, and the committee of the governors have adopted, proposals for the extension of the day course in engineering from two to three years.

The Norfolk County School Buildings at North Elmham have been purchased by a gentleman, and presented by him to Dr. Barnardo, in order that they may be used as a country home for children under his care.

The ancient church of Marlston, in South Berkshire, has been restored and enlarged at the cost of Mr. G. W. Palmer, M.P., the owner of the Marlston estate. An old Norman doorway which had been walled up has been opened out and an oak door fixed.

A stained glass rose window has been placed in Holy Trinity Church, Meole Brace, in memory of Major Coldwell, late of Shrewsbury, the subject being "Christ in the Carpenter's Shop." The window is from a design of Sir E. Burne-Jones, and the work was carried out by Messrs. Morris and Company.

The Manchester Corporation have purchased for the City Art Gallery the following pictures, viz.: "Lady Whitmore," by Sir Peter Lely; "Portrait of the Hon. Thomas Bligh," by George Romney; "Changing Pasture," by Leslie Thompson, R.I.; and "Gathering Plums," by H. H. La Thangue, A.R.A. A portrait of the "Ven. Archdeacon Sharp," by Thomas Hudson, has been presented to the Art Gallery.

Edward Jones, Gas Offices, Treforest	June 18
C. F. Dawson, Surveyor, Public Offices, Barking	19
E. Garside, A.M.I.C.E., Town Hall Chambers, Ashton-under-Lyne	20
W. A. Tait, C.E., 72A, George-street, Edinburgh	20
Edwin Latham, M.I.C.E., Parliament Mansions, S.W.	24
W. T. Lawrence, Clerk, Council Offices, Millom, Cumberland	July 3
The Associated Portland Cement Works, S.W.	31
James Birch, Secretary, Castle-street, Canterbury	
The Master, Workhouse, Osney try	

The Engineer, Garsfield, Macclesfield	June 15
C. J. Grimwade, Urban District Council Office, Hadleigh, Suffolk	" 15
Thomas H. Lewis, Clerk, Council Offices, Milford Haven	" 15
T. Cmoey, Man. Dir., 237, Gresham House, Old Broad-street, E.C.	" 17
The Secretary, 101, Leadenhall-street, London, E.C.	" 17
W. Woner, Surveyor, Ham Common	" 19
C. W. Young, Secretary, Nicholas-lane, E.C.	" 19
Rees Jones, Borough Surveyor, Smithfield-road, Aberystwith	" 21
S. G. Overton, Clerk, 2, Manor House-street, Horncastle	" 21
J. Foster, Gas and Water Manager, Leigh, Lancs	" 22
J. Ellman Brown, Clerk, Shoreham	" 22
The Clerk to Council, Burgess Hill	" 22
W. Chapple Eldbros, Borough Surveyor, The Square, Shrewsbury	" 24
The Director-General of Stores, India Office, Whitehall, S.W.	" 25
C. Nixon, Superintendent, Gas Dept., Town Hall, Manchester	" 26
Wm. Bolton, Borough Engineer, Municipal Offices, Wigan	" 26
Montague S. Blaker, Town Clerk, Town Hall, Lewes	" 26
Wm. Everitt, Manager, Leeds-road, Ilkley	" 27
Samuel J. Newman, F.R.I.B.A., 3, Tennyson Buildings, Parkstone	" 28
John W. Liversedge, Surveyor, Byron-street, Ashton-in-Makerfield	" 28
J. W. Start, F.S.I., Surveyor, 54, New Broad-street, E.C.	" —
H. J. Clarson, Borough Surveyor, 22, Church-street, Tamworth	" —
J. W. Start, F.S.I., Surveyor, 54, New Broad-street, E.C.	" —
J. Howard, Imperial Hotel, Huddersfield	" —

In the Redland Grove Methodist Free Chapel, Bristol, three stained-glass windows were unveiled last week. One window represents Easter Morn, another depicts the Good Samaritan, and the third has as its subject Charity. The three windows have been carried out by Messrs. J. Bell and Sons, of College Green, Bristol.

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PREACHING AND PRACTICE.

LECTURING and theorising on architectural subjects have not always been attended with practical results. A great many clever and ingenious dissertations have fallen rather flat. The professional art proselytiser, for instance, inculcates opinions and doctrines for many reasons do not work out satisfactorily, or he is accustomed to "air" cretchets that he would not care to put into practice. For example we have had many elaborate discourses on the use and treatment of materials, such as brick, terracotta, iron, and plaster, in which the author has laid down certain hard and fast rules as to their treatment in design that could not be followed with any degree of practical success, simply because the practical limitations of the manufacture have been neglected or purposely ignored. On the architectural treatment of ironwork, for instance, we have heard it stated that the architect should repudiate all covering and concealment, and exhibit the bare iron, the steel columns and girders; and the same class of "muscular" theorists, in speaking of iron or timber construction, have strenuously opposed all sorts of plaster or wooden encasings, ceilings, and the like. Theory and practice have the unfortunate habit of running on separate lines, and this is mainly due to education, and we may illustrate this by taking the technical school and the ordinary apprenticeship mode of instruction. As we have pointed out so often in these pages, the work done in classrooms and technical schools is done under conditions so different from those of actual work in the office and factory that the student remains in ignorance of the real workman's methods. The school or classroom turns out a proficient man in geometry, mechanical problems, or a student well up in the history and nomenclature of art and decoration. When he, as he often does, assumes the rôle of a lecturer, his views on architecture and art are very different to those of the man brought up in an architect's office, who has had the run of buildings in progress and the workshops. To the classroom student, it is true, the unexpected never happens, and it is easy for him to lay down hard and fast rules. On the other hand, the practically-trained architect has to encounter difficulties directly he begins to make out working drawings. Unforeseen questions arise which are inseparable from actual building operations, and these difficulties have a very real influence on the mind of the architect in his mode of design. The methods, too, of the craftsman, his mannerisms, and tools in shaping the work are factors. Here we have at least one reason why so many theorists fail to put their views into practice in matters of construction and art. The man who runs a hobby in art often propounds an opinion on construction that would be quite impossible to carry out, or would be laughed at by a skilled workman. Thus there are those who talk about artistic timber construction in a way that would repudiate such traditions of carpentry as the king- or queen-post truss—or who, if a roof had to be constructed, would do so in the most primitive manner: use scantlings the wrong way to take the strain, mortise and tenon where abutment and tenon joints or some other form of joint is better. So a learned professor some years ago, in speaking about the architectural use of ironwork, suggested that the engineering forms of girders should be taken and simply decorated by applied orna-

ments or carvings. I prefer to leave that readily acceded to by all ironworkers as not encouraging any radical change. Here we may draw a distinction between those who suggest difficult and impracticable modes of executing work, as the "art faddist," and those who preach easy and accommodating doctrines. Against both these sets of teachers or professors the student may be on his guard, though the former class are often honest and sincere, and have, moreover, the prejudices and traditions of the profession to fight against, and are on this account worth listening to. It is rather the latter and more ordinary kind of instructor or theorist of whom we chiefly speak here. He may be thoroughly competent in the theory of his vocation, whether it is on construction, on the use of materials, on styles, on planning, on decoration. What he has to say is often full of common sense, but he is uncompromising in tone. His opinions on these subjects are often of the most assertive and personal kind, that will brook no opposition or discussion.

A few of these self-imposed teachers of architecture and art are men of undoubted ability in particular spheres of work. We can name a dozen or more who are trying to place the profession on a higher basis; to rescue it from the odium of the mere "five-per-center," and who are endeavouring to raise the crafts to their old position. They have the noble, but hopeless, task before them of striving to stem the overwhelming tide of Philistinism and popular tastes, and of resisting the influences of prejudice and traditions. The attempts they have made to put their opinions into practical shape have not been very successful, either from their total rejection of precedent or their adoption of ideas based on *a priori* assumptions. Their designs often exhibit a crude style or individual eccentricity in the treatment of plan and detail.

How many of those who have essayed new theories of design and construction have given us any practical exemplification of their views? During the last half-century we have had exponents of metallic systems of construction which should be light and elastic and dispense with all the difficulties and risks of stone or masonry construction; others have proposed systems of construction in which concrete and steel should be the main elements; others structures of cellular bricks. Many well-known authorities, like Fergusson, have dinned into our ears the fact that architecture has ceased to be a living art, and that the only hope of inventing for ourselves a true and appropriate style is to set about it in the way the old builders did, when princes, priests, masons, and other crafts worked together through centuries, lending the aid of their experience and reasoning. Each improvement or phase of style was not due to individuals, but to all classes working together with the same aim. No one can dispute this statement, and, in fact, the uncontracted buildings of to-day are built much on the same lines—engineering structures are supposed to be, at least. But these advocates of the old system fail equally to show us how this process is to be applied in our present conditions. Fergusson pointed to the Crystal Palace at Sydenham as at least one great building carried out wholly on the principles of Gothic or of any true style, and the Muswell Hill Palace as a step in advance; but we are afraid these examples will not commend themselves to the mind of the architectural critic. Nor can it be said that those most learned in the history and theory of architecture have proved themselves to be happy in their designs. Admirable as exponents of styles, they have somehow lost the faculty of invention; their minds have been occupied in storing up facts and dates, in arranging and classifying rather than in forming ideas and giving expression to them. We are most

shocked by a great explorer, archæologists, and historians of art—men like Layard, Schliemann, Plünder, Petrie, Willis, Freeman, Fergusson, and others, whose investigations, and researches, and criticisms have been of great value to the progress of architecture; but these men have not gone beyond their sphere of investigation or criticism; they have been contented to investigate the past and have confined themselves to historical research.

Theories of planning do seldom work out well or find acceptance with the profession. We have a number of experts in planning—some skilled in the arrangement of flats for the working classes, others skilled in the planning of hospitals, workhouses, asylums, schools of various kinds, baths and wash-houses, technical institutes;—each of these has made planning a particular branch of his profession, and his buildings, whatever their external merit as designs, have a special value to the profession, as indicating the latest development of requirements in clinical science. Other men, less expert, may give us often better architecture; but what is chiefly required are buildings planned on scientific and economical data. A few are mere visionaries: they are ingenious, well-intentioned theorists who propound ideas of their own on various subjects. There are some in the profession who are "strong" on proportions, and who are continually advocating the principles adopted, or asserted to have been adopted, by the Greek and Middle Age builders. Exponents of Egyptian and Greek Vitruvian proportions still exist. Plutarch and Plato both give a triangle as the principle which the ancient Egyptians applied to their edifices, such that the side that makes the right-angle is 3 units in length, the base 4, and the hypothenuse 5, and these geometrical ratios were applied in determining the distance apart, or the intercolumniation of colonnades and porticoes, and the transverse section of buildings, as the Cathedral of Amiens, which is obtained by two such triangles superposed. Then we know that most of the transverse sections and façades of our cathedrals have been proportioned on the equilateral triangle, which completely satisfies the eye. No one will deny that a harmony of proportion is established on the basis of certain geometrical formulas, as proved by M. Henszmann in his work "Théorie des Proportions Appliquées dans l'Architecture," and by many English writers given by Gwilt. These relations were possibly used in determining the plans, sections, and façades of temples and cathedral churches, but they would be inapplicable to most modern buildings. Formulations of geometrical and harmonic proportion are clever, but their systems do not easily lend themselves to the modern architect.

Acoustics is made a hobby by some architects, and their theories are often lectured upon; but we have never yet seen a building planned on purely acoustical principles. The expert in the science may preach about certain ratios of length, breadth, and height, rules as to shape of plan and of section, the form of ceiling, materials to be used, and so on; but if we were to ask him to give us a plan for, say, a modern lecture-hall or concert-room, we should probably be shocked at the proportions and lines adopted, the curvature of seats and walls, and the sloping ceiling. We cannot expect that the architect will care to adopt the theory in his new church or public hall or theatre, nor that the public who fill these buildings will consider any such scheme a success. So it is with other new or experimental hobbies, whether in manufactures or the spheres of medicine and religion. They do not take till people become absolutely convinced of their practical value. The architect cannot afford to be a faddist, nor to ventilate a theory at the expense of his reputation. It is not given to every architect to create

of architecture," but the man who has not a born instinct for it will never learn it by simply mathematical formulae.

Many tell us that our modern system of building is not very clearly told how these so-called reformers of building would proceed if they had all their own way. Prejudice and convention have no doubt been objectionable; we make our smaller middle-class houses as if they were for the poor, forgetting the social differences between families, the requirements of families; we build houses in the suburbs in which are packed two or three families, and we put apartments that are quite out of place for a house in which there is a large family on small means. The ordinary modern "drawing-room," as it is called, is a small cramped room crowded with furniture and pictures, and is perhaps the only room in which it is possible to sit down. We want that there is a room in which a man can sit down and think, but we must not unduly shock the modern occupant, who is not disposed to accept the teaching of the old masters, and believe in the "packing case," or that advanced clique in the profession who put these ideas in it. Not a few of the exponents of this school would shock the ordinary man by his primitive designs for halls and parlours according to the new gospel. These indulge in bareness and crudity as an extreme reaction from ornamentation. One to whom long ago proposed that in buildings should be left to hands of skilled craftsmen working under the direction of the architect, each workman being free to design and execute; but we are afraid to think under our present conditions how this theory would work out. We do not dwell here on the art-crotchets of well-known men, who have some "hobby" in design or in ornament, a scheme of colour decoration, or what not, but which for some reason or other is seldom adopted by the profession. Nor do we dwell on the instances we have mentioned the exponents of new ideas, theories, or principles have not right, and sometimes common sense, on their side, and that tradition or prejudice has much to do with their non-acceptance. What we contend is that methods and practices now in use come to us with the sanction and recommendation of experience, which the innovation does not; and that the architect is hardly justified in hastily abandoning the traditional form of plan or design to which he has been accustomed for a departure that may lead him into difficulty, until he has assured himself that it is both wise and practicable. Although it is a safe prescript in polemics to do what the preacher tells you—not necessarily what he does; in architecture it is often the safest course to follow the best practice of the age, if we wish to avoid, on one hand, the risk of uncertain theory, and, on the other, the eccentricities of the individual teacher.

BUILDING TRADES APPRENTICESHIP.

THE decline in the apprenticeship system in the building trade has been the subject of much recent discussion. The report of the Committee of the Technical Board of Education, given of the serious falling-off of the number of workmen who were apprentices to building firms in London, is a striking example. We referred to the number of firms who took apprentices—we believe, something considerably over 100. The proportion of

apprentices to working men was then found to be about 1 in 10. This has been assigned. One of the chief is the introduction of technical schools and classes, which, excellent as they are, have to some extent supplanted the apprenticeship system, a cause that has been justly deplored by the profession and the building firms themselves. Another reason is that the conditions of labour and contract work are not favourable to the system. The old workshop system, that was once under the care and supervision of the master who took apprentices, is almost extinct. Instead, we have the large establishment of a modern contracting firm equipped with the latest machinery and machine tools, and which is cut up or divided into various branches or trades under different foremen. The old apprentice lived in the house of his employer, and worked under his direction; the master looked after both his pupil's training and his morals; they both worked at the same bench and solved the same difficulties together. The apprenticeship deal implied a close relationship, as it has been pointed out; but under existing conditions the apprentice would probably be left to his own devices, take lodgings near the works, and be supervised by perhaps several members of the firm, and their foreman, without any word of counsel, of advice, or of instruction; and what is worse, his instruction would be divided among different men, the consequence of which is, the apprentice becomes a dabster in all the trades instead of mastering one or two, as each department is managed by an expert, and does not care to impart any other knowledge to a young beginner. The secretary of the Apprentices' Institution attributes "the falling-off in apprenticeship in London to the absence of proper organisation"; but this fault could soon be remedied if, as was pointed out some time ago, the City Companies interested in the trades could assist youths in being apprenticed. The Apprentices' Institution is, we believe, doing a good work in providing apprentices with money for apprenticeship and in supervising them. The principal thing is to interest the large building firms in the system by removing the difficulties and prejudices that exist. There is a strongly-rooted prejudice amongst large firms that apprentices are more troublesome than they are worth; that under the conditions of contract-work they are unremunerative when work has to be turned out quickly; and that as the trade is now so divided into departments, in each of which expert hands are required, the apprentice would not find a place. Then there is the lazy and mischievous youth whom it would not pay to have at any price. These objections are no doubt valid, but we see no insuperable difficulties. The building firm could make arrangements for taking and boarding pupils and receive proper instruction under those in charge of the various departments. A small rising wage might be given as an encouragement to industrious youths. No doubt the country or provincial firm has better opportunities for taking apprentices than the large London firm, and there is a greater mutual advantage. There can be no doubt whatever that the best hands are those that have come up from the country, where the masters have taken some interest in the youths, and where they have been brought up under the eye of the master, and within the control of their friends. Those young men have generally chosen their own trade, and have been apprenticed to a man who, for his own sake, has taken pains to instruct him and make him a proficient workman. The evidence brought before the Committee of the Technical Board of Education established the fact of the superiority of the country workmen brought up in London, and made us try to trace by various different

and physical discomforts. The chief value of the apprenticeship system is the personal relation between master and pupil, by which the master takes a special interest—not wholly disinterested—in the youth's capacity and progress. The technical school, excellent as it is, does not supply this relationship. The youth fails to see any direct application in a particular study to his work; he does not receive any personal attention or direction in his labour, as he would do under a sympathetic master; his capacities or special aptitudes are disregarded. Again, the school instruction passes over or smooths away any practical difficulty that occurs in a building. Let us mention one or two of the trades where the technical training of the school has been of value.

The Exhibition of Woodwork and Carving held at the Hall of the Carpenters' Company, London Wall, just closed, is edifying as showing a development of technical instruction and handiwork unknown a few years ago. The practical part of architecture is so indissolubly connected with the constructive art of the carpenter, that it may be safely said our progress has been much aided by the encouragement given to the trade by the Carpenters' and Joiners' Companies. Before the Carpenters' Company, some 17 years ago, established a school in Great Titchfield-street, apprentices and craftsmen in the trade had little assistance afforded them—books were few and dear. There were no inducements offered for exhibiting specimens of handiwork or for the display of skill in construction. The company has since offered medals, money prizes, and certificates for the best work produced, and the specimens we noticed the other day are very gratifying proofs of the value of the school and exhibitions held periodically. We have on previous occasions noticed the chief work turned out by students, and there can be little doubt that the instructions given and the skill called out in these contests have materially improved the quality of the exhibits. In many cases, as in the models of truss roofs and derrick cranes, executed to a larger scale than formerly, we also notice a corresponding degree of constructive skill, the result of the class teaching given in Great Titchfield-street and other technical schools. The making of models is by far the best and most intelligent way of learning constructive carpentry and masonry, as the student can be made to grasp the subject both visually and mentally. Treatises on carpentry are, of course, invaluable for teaching principles and theories; but without a knowledge of descriptive geometry or projection a scientific treatise is an obscure book to the ordinary apprentice or student whose knowledge of the trade has been picked up in the shop. A model, say, of a roof or the centring of a vault appeals at once to the eye, and the student can realise the "three dimensions," and the model becomes a tangible illustration of the actual work. If the apprentice can be afforded an opportunity of applying his skill and handiwork to these problems of construction, he learns a great deal more from them than he would by the aid of treatises. So far, the technical school and the exhibition of handiwork is of immense advantage. But in these competitive exhibitions of the skill and handiwork of students, the practical and accidental are left out of account. We see, for instance, many typical examples of roof-trusses, cupolas, bridge-centres, partitions, besides staircases, sashes and casements, and other joinery; but the difficulties and problems that occur in actual building in adapting trusses to different plans and conditions, or the same principles to special circumstances in the actual building, are not exemplified, and it would be almost impossible to do more than illustrate ordinary types. As we have said, the system fails to instruct the student in actual difficulties of execution, or to meet

exigencies of construction. These can only be learned by apprenticeship, where the youth is constantly being put on his mettle. Evidence of builders of repute in London has established the fact that theoretical training in the technical schools has not been so successful as a preparation as that of serving as an apprentice, though most of the witnesses admitted the best workmen were those who supplemented their workshop training by the technical school. The students of these schools learned geometry and drawing to scale, the elements of mechanics, which acquirements gave them an advantage over others in the interpretation of architects' drawings, and made them better fitted for the duties of foremen or supervisors. But the work in the school is done under conditions very different to those that prevail in the actual requirements of building. Everything, so to speak, is made easy; there are no contingencies like those of foundations, shorings, hard or difficult materials to work, or special points to consider—the student is supplied with all the data of the problem; materials, easy working, wood and stone, tools, straightforward examples. Not only in carpentry and joinery, but in brickwork and masonry, plastering and iron-work, simple straightforward examples are worked out according to a prescribed design—a very different state of things to that where the workman is obliged to get over an unlooked-for difficulty by a departure from the working drawing. We hope that apprenticeship will again find a place in the training of building crafts, and that some means of co-operation may be found in which the classroom may be made to complete the knowledge of the apprentice and workman.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE closing meeting of the Institute for the present session was held at 9, Conduit-street, W., on Monday evening, the President, Mr. William Emerson, in the chair. Mr. ALEXANDER GRAHAM, hon. sec., said he regretted to announce the death of Alexander Russell Inglis, Edinburgh, an Associate since 1894, and Senior Medallist for 1897. The President stated that the appeal he had made on behalf of the Architects' Benevolent Society had, he was glad to be able to say, been successful, and in response thereto £1,189 2s. had been received. He sincerely hoped that this announcement would not tend to stop the flow of contributions, as the Society needed all the help that could be afforded to it by the profession. He had read in the *Times* the statement that their late friend, Mr. Arthur Cates, had bequeathed to the Society the sum of £1,000, but no official communication on the subject had as yet been received.

EDUCATION IN BUILDING.

Professor W. R. LETHBRIDGE read a paper on this subject, in which he pointed out that everything was known in France and Germany of the manner of production of their Medieval buildings. Rheims, Amiens, the Sainte Chapelle, and other edifices were recognised as the work of men who called themselves masons. We knew the wages they received while they worked, and we could visit their tombs. But there was a curious reserve in England about the "architects" of our English cathedrals, and no general attempt had been made to make known the facts as to the chief builders. Although the facts were ready at hand for investigators, vague theories still held the field. We went on repeating that it was unknown who built the wonders of Medieval art, or surmised that they were the work of monks, or of travelling freemasons, or of a cosmatic guild, or they were designed by clerks like Elyas of Dereham, Edward of Westminster, or William of Wykeham. The fact was that in England carpenters, masons, smiths, and glaziers existed in separate or general crafts, which organised the education of the body as a whole, especially seeing to the apprenticeship. Practically in London freedom of the craft and freedom of apprenticeship went together, and after passing through his seven years' course a

youth was received in his guild as a master. Throughout the Middle Ages the country was subject to the castles and the barons, but the towns organised themselves, on a craft-guild basis, and at the end of the 13th century there was a great struggle between the two powers. Isolated cases might be found in which some mason was recognised as a great master could not be attributed to a new work, but advised by consultation and by means of rough patterns, while the resident mason worked under his advice; but as a rule, the chief master, employed like an officer to-day, had a general consulting leadership. The lecturer quoted, in support of his views, many of the references in the Rolls of Westminster Abbey, pointing out that the title of "abbey mason" was continued until the beginning of the 19th century, when it was changed to "clerk of works." Here, and indeed in all countries, the art of building was developed by the continuous experiments of practical masons and carpenters, until the drawing-master of the Renaissance brought in the scholarly archaeology, first of Greek, and then of Roman forms, and at a much more recent period Pugin and his followers developed the simulation of Gothic forms. The most marked phenomena of "modern architecture," so called, was the growth of a vast number of patent processes in building, and increased complexity in the professional side of an architect's work, until they arrived at what he might call the Syndicate Style. They could neither advance by reviving the forms of some style as yet untouched, say that of Mycenae or of Mexico, nor by retaining the methods and mannerisms of Wren, or some other safe man. As to proportion, nobody knew anything more about it than that work done with a large reasonableness, and fitted to its purpose, looked well. No two authorities were agreed on taste and principles in design; and as to beauty, no general reasoning could be based upon that subtle and elusive essence, save so far as a man might try to explain what moved and touched him. Nothing healthily new, or wise, or beautiful could spring up in architecture save from the study of building. This study could be done in many ways—by spending more time at work and less in the office. The British workmen were, after all, the true artists in building, the representatives of the Medieval architects. The offices of the several organised trades were the best centres to get valuable and largely disinterested advice as to local materials and labour. These unions, in a much narrowed form, represented the old guilds, and any real improvement in practical building would be accompanied by these unions assuming more and more the functions of the old guilds. They would yet see that even for their present prime purpose of keeping up wages other things are necessary than the crude war of strikes. The transformation of the existing builder into a contracting agent, and the consequent almost entire failure of the last remnants of the apprentice system, had tended to put the teaching of the several crafts into the hands of the men themselves. By means of schools, and a system of apprenticeship to the guilds, masons would, he believed, again see to the training of masons, carpenters of carpenters, and plasterers of plasterers. Even now the plasterers of London were trying to make it an obligation that all learners in their trade should pass through such technical classes in plastering as already existed. If this point were gained men would not ultimately be accepted by their fellows as qualified unless they had gone through such an apprenticeship course: thus they would get back to a definition of "mastership" in the crafts once more. The quality of workmanship rested in the long run on an economic basis: the thought and energies of the workers were now so exhausted by the wages war that they had only heart and strength left for routine labour. Where labour was honoured there art would certainly be found, for honourable labour was art. Architects must draw near to the workmen by every means in their power. Would it be possible for the men at a given work to elect a spokesman who should have right of access to the architect and the drawings? Again, architects must learn about building in schools—schools of practice and theory, experiment and research. Building schools exist in several Continental cities, and such schools should be established or assisted out of public funds. In a big London institution he should like to see all the building crafts carried on side by side, where experiments might be made in brick-arching, stone-cutting, and timber-

training, with a supply of apparatus and testing-plant. Here also the mechanics of construction should be taught mechanically and demonstrated in models. The question of education in building to be solved ought to reach all classes of men engaged in building, and it ought to set itself to improve all the mass of building done in England. Some day, he predicted, pleasant, natural, living architecture would be founded on common sense—it could stand on nothing else.

At the close Mr. PAUL W. WATKINS proposed and Professor BRIDGES seconded, a vote of thanks to the lecturer. This was supported by Messrs. THOMAS BRIDGEMAN, LEONARD STOKES and SIDNEY VACHER, and was carried by acclamation. Professor LETHBRIDGE briefly replied.

SITE FOR THE LIVERPOOL CATHEDRAL.

A SPECIAL meeting of the Liverpool Architectural Society was held in the Law Library on Thursday, June 14, the President, Professor Simpson, in the chair. There was a large attendance of members, and the following report was adopted:—"The question of the site for the new cathedral of Liverpool is naturally one of great interest to all architects, and especially to those practising in London. The first essential of a cathedral for Liverpool is, that it shall be a cathedral of the diocese, and not of the city only. The most central position for the diocese is that in closest touch with the railway stations. Four sites have been suggested, (1) St. Peter's Church, (2) Monument Place, (3) St. Luke's Church, (4) St. James's Mount. These are placed in order of centrality. Of these four sites, Nos. 1 and 3 are not considered, as for various strong reasons they are regarded as inferior to the other two. The advantages of the Monument-place site are as follows:—Its position and approach are unrivalled in Liverpool. There is an opportunity here for a west front which might be the finest in Europe. The proximity of the site to the great public buildings of Liverpool is of the utmost importance. Its relation to St. George's Hall, in view of State processions, civic or otherwise, is of great advantage. It is near to, or in direct communication with, the principal railway stations, and is passed by cars from the pierhead as well as by those from the north and the south of the city. The site is a very high one, the level of the ground at the west end being the same—132ft. above the datum line—as that of the St. James's Mount site, and any building, therefore, erected thereon, would be as visible from the river and the Cheshire side as one placed in the latter position. The foundation is rock. The removal of many of the buildings at present on the site would be of distinct advantage to the welfare of the city. Finally, the orientation would be that customary in English cathedrals and churches. The disadvantages which have been urged against it are:—The cost of the site, the noise from passing cars and traffic generally, and the surroundings. As regards the first, this is undoubtedly very great. The question of noise is not a serious one, owing to the construction necessary for so large a building. St. Paul's, London, is very similarly placed, and the sound of the traffic outside is hardly, if at all, perceptible inside. The surroundings, it is true, are not all that could be desired; but cathedrals ought to be equally accessible for all classes of the community, and the most favoured quarters are not necessarily the best for these buildings. The advantages of the St. James's Mount site are as follows: The site itself would be much less expensive than that of Monument-place. The situation is a quiet one, and the surroundings are picturesque. Any building erected here would stand out well, and could be seen from the river and Birkenhead. Its disadvantages, in our opinion, are much greater than its advantages. Its inaccessibility is perhaps its greatest; it is far removed from the main lines and centres of traffic. The site is a very narrow one, and it would be difficult to obtain a good near view of any large building placed upon it. The approach, in an architectural sense, is very bad indeed, and no vistas would be obtainable from any point. The cost of the foundations would be very heavy; either the present mound would have to be removed, or else the foundations would require to be carried down very deep. The suggested suspension bridge over the cemetery would be exceedingly

the church, which would be south, would be a... the church, which would be south, would be a... the church, which would be south, would be a... which is to stand for all time. A cathedral need

best site Monument-place, and erecting a portion of the building upon it. This portion... taking up the frontage to Monument-place and extending back to Anson-street, or it might be the church and transept portion which would... matters of vast importance such as this, the only... experience that, in the long run, this is the most easily obtainable."

The views thus laid down by a representative gathering of local architects did not appear to carry much weight at the meeting held on Monday in the council chamber, Liverpool Town-hall, in furtherance of the cathedral scheme, when Earl Derby, lord-lieutenant of the county, presided over a crowded assembly of influential Churchmen and Nonconformists. Referring to the contention which had taken place over the selection of a site, Lord Derby said that in a large town like Liverpool, with its rapid growth and the increasing density of its population, they

of years, and, after the lapse of that time, expect to find that sites which were open spaces and available when the diocese was formed, could still be acquired on terms which might have been... The two sites now mainly occupying public attention were those in... Mount. With regard to the former, if money was absolutely unlimited, and if they could deal with the land as an open space, there was much which would accord with the view of the city architects, and Monument-place might be... architectural skill. But it was their duty at the meeting to deal with what was practicable, and Monument-place at St. James's Mount. Objection had been raised to the latter site because it was now used as an open space, and it was contended that the building of a cathedral upon it would deprive the inhabitants of the neighbourhood of the only recreation ground they possessed. But he pointed out that, nowadays, the churches were not walled in, but were made as beautiful and attractive as possible, so that the ground would still be available for public gardens. Their failure in years gone by to provide a cathedral had been due to the battle of the sites, and, although they might wait five or ten years to carry out their object they must not risk a second failure, and he urged the meeting to approve of the St. James's Mount site, which had been adopted by the Bishop and the Selection Committee. The Bishop of Liverpool then

"That this public meeting of the Diocese of Liverpool is of opinion that the time has arrived when active steps should be taken to provide a cathedral for the diocese." He said that the cathedral they were to build must be worthy of Liverpool, and no one could deny that such an ecclesiastical edifice was absolutely necessary to meet the wants of the diocese. Although every effort had been made to carry on a cathedral service in the church of St. Peter, frequent occasions occurred when its unsuitability was very apparent, and especially when great national services had to be held. Mr. John Branker seconded the resolution, and said that the reason why the... a cathedral was because he devoted his energies to providing the diocese with churches and men and to increasing the stipends of the clergy, which were sadly too small in the past. Mr. Alfred L. Jones supported the motion, and expressed the hope that, before many months were over, the King would lay the foundation-stone of the new cathedral on St. James's Mount. The

which the Hon. Arthur Stanley, M.P., proposed a motion in favour of adopting the recommendations of the committee for the St. James's Mount site, and this was seconded by Sir Edward Russell and supported by Canon Stewart. An... on the ground that this site belonged to the public and should not be taken from its present uses, but the resolution was carried by an overwhelming majority. It was stated that the subscriptions promised towards the scheme amounted to £134,868.

NEW DRAINAGE BY-LAWS FOR LONDON.

THE reply of the Local Government Board to certain objections taken to the new Drainage By-laws drawn up by the London County Council was given on Monday in the following letter:—"Whitehall, S.W., 17th June, 1901. Mark H. Judge, Esq., Sir, I am directed by the Local Government Board to advert to your letter of the 16th November last, forwarding a letter signed by 34 medical men, architects, and others relative to the by-laws proposed by the London County Council with respect to the drainage of buildings, and to state that after careful consideration of the representations contained therein, the Board have not seen sufficient grounds for withholding approval of the by-laws in their present form. They have accordingly approved the series.—I am, sir, your obedient servant, W. E. Knollys, Assistant Secretary."

The by-law which provided that all soil-pipes should be placed outside buildings is repealed. The new regulation is that soil-pipes shall be outside "whenever practicable." One of the main objections urged against the new by-laws was their want of definiteness. The memorial to the Local Government Board, which was signed, among others, by the following architects:—Mr. Edwin O. Sachs, Mr. Halsey Ricardo, Mr. E. H. Prior, Mr. W. W. Gwyther, and Mr. Mark H. Judge. And by the following medical men:—Dr. Henry Kenwood, M.O.H., Mr. Jonathan Hutchinson, F.R.S., Dr. Roger-Smith, Dr. W. S. Playfair, Sir Joseph Fayrer, Dr. Danford Thomas, Dr. Willoughby, D.P.H., Dr. Edward Blake, Mr. Horatio Symonds, F.R.C.S., and Dr. A. O. Grossman, urged that "such terms as 'whenever practicable,' 'as near as practicable,' 'where any other mode of construction may be practicable,' 'except where unavoidable,' 'equally suitable,' which appear repeatedly in the proposed by-laws, should be avoided, and if used at all, surely the authority to decide the matter should be stated, or endless disputes must arise as to what is 'practicable,' 'unavoidable,' or 'equally suitable.'"

The reply of the County Council to this criticism was that "it was found practically impossible to lay down definite rules of construction which would apply in every case, and the terms in question give elasticity to the by-laws, without which their enforcement would be found extremely difficult, if not impracticable."

To this Mr. Mark H. Judge rejoined:—"Many beside the London County Council are aware that it is 'practically impossible to lay down definite rules of construction' in many of the matters attempted to be dealt with in these by-laws, and will, I am satisfied, agree with me that until it is practically possible to do so, there is no justification for making by-laws at all. To adopt by-laws with an elasticity which is determined by the will of a public sanitary inspector would be to create a public danger, and, if permitted, will make the sanitary administration of the Metropolis, which is already oppressive, a tyranny which, in the interest of the community, will have to be resisted."

SINGLE AND PAIR ROOM TENEMENT DWELLINGS.

A CONCISE report on examples of single-room and pair-room dwellings provided by municipal, and other authorities in London, Liverpool, Manchester, Edinburgh, and Glasgow has just been presented to the City Council of Newcastle-on-Tyne by their medical officer of health, Dr. Henry E. Armstrong. The report is published in pamphlet form, and is copiously illustrated by plans of the various dwellings described, several of which are reproduced by permission from the BUILDING NEWS. Much of the information as to London dwellings is derived from Mr. Deane B. St. John's letter

delivered in February of last year before the Architectural Association, and reported in our issue of Feb. 16, 1900. Dr. Armstrong remarks that the Midhope-buildings in Cromer-street, Gray's Inn-road, erected by the East End Dwellings Co., show a good design generally, except that there is but one water-closet to each two pair-room and one single-room tenement. The first premiated design for the London County Council's estate at Millbank, by Messrs. Spalding and Cross, is referred to with approval, and the Gun-street dwellings are said to be well worth seeing. Among the tenements for the poorest classes erected by the L.C.C., those in Boundary-street, Shoreditch, Borough-road, and Ann-street, Poplar, are said to deserve inspection, the last named being the cheapest class of building yet erected by this Metropolitan authority. The Peabody Buildings near Brockwell Park, S.E., designed by Mr. W. E. Wallis, architect and surveyor to the Peabody Trust, are described in more detail. At Liverpool the municipal tenements are of one, two, and three rooms, very few being single apartments. Mr. H. P. Boulnois (now of the Local Government Board), when city engineer, tried to solve the problem of houses at a unit of 1s. a room per week for the poorest class of labourers, with an allowance of two rooms to each family. These buildings were plain and substantial, and of three types. At Manchester blocks of buildings have been erected in Oldham-street for 848 persons, and in Pollard-street for 448 persons; the latter buildings are in 130 double tenements, plainer in treatment than those in Oldham-street. At Edinburgh three sets of tenements have been built under the direction of Mr. John Cooper, burgh engineer, the largest group being 100 tenements of workers' dwellings in Cowgate, erected at a cost of £17,000. The City Improvements Department of the Glasgow Corporation, Mr. W. C. Menzies, manager, have built a large block on the balcony system in St. James's-road, a second group at Haghill; the department have completed in all 467 houses for the poorest classes, with single-apartment houses, at an average rent of £5, and two-apartment houses at an average rent of £8 5s., and other works for providing dwellings of one or two rooms each are in progress in Anderson and Calton districts at an estimated cost of £15,000.

"NEW ART" FURNITURE AT THE VICTORIA AND ALBERT MUSEUM, SOUTH KENSINGTON.

THE nation is indebted to Mr. George Donaldson for his generosity in presenting to the Victoria and Albert Museum a collection of "New Art" Furniture, now arranged in the Tapestry Court of the Art Museum. The largest and most striking example seen on entering is the side of a room with a settle in marquetry with ingenious selections of natural woods, lending themselves by their grain or marking to the designs of the trees, figures, &c. This work is German, and made by Herr J. J. Graf, of Strassburg. The marquetry is by Herr C. Spindler, and represents subjects taken from old Alsatian legends.

Visitors to the Paris Exhibition will remember the rooms furnished in the new style by Monsieur Bing, and will recognise the chairs and table as coming from his workshop. The bedroom suite, consisting of a bedstead, wardrobe, and commode, all enriched with carving and inlaid with flowers, was manufactured by MM. Péro Frères. The work of Monsieur Louis Majorelle, of Nancy, who has obtained the highest distinction in France, is represented by three cabinets of unique form, a table, an armchair, and two trays. Three chairs with seats and band backs of leather, cut and embossed with "New Art" ornament, are from the hand of Monsieur A. Darras.

Monsieur Emile Gallé, of Nancy, has been turning his attention to the manufacture of furniture in the new style, and his work may be seen in five specimens of furniture—namely, a tea-table, a chest of drawers, a lady's work-table, a screen, and a tray, all inlaid with flowers and leaves. The chest of drawers is further inlaid with a large butterfly partly in mother-of-pearl. A writing-table, two chairs, and a stool in light wood, with gilt metal mounts and plush coverings, are from the workshop of Monsieur E. Bugués. One end of the room is given up to furniture from Hungary and Norway. The work of the former country is represented by two large cabinets, a table, and two chairs, designed by Herr Edmund

Farago, whilst the characteristic art of Norway is clearly seen in the two chairs made by Mr. C. G. Christensen. Between the Hungarian cabinets is a large open tapestry hanging from the tapestry works at Christiania, and over Monsieur Galle's furniture is a woven picture of Spring after a design by Monsieur E. Grasset.

The four showcases contain small objects of art in metal, pottery, and glass, illustrating the new movement. One of the cases is filled with the lustrous glass of Lütze, of Klostermühle, and the painted and cut-glass of Monsieur Emile Galle, of Nancy. A second case contains examples of the wares made by Herr Zsolnay, of Fünfkirchen, and Professor Max Langer at Karlsruhe. The third case has a miscellaneous collection of pottery from Copenhagen (Royal Porcelain Factory), Rörstrand, Rookwood (Cincinnati), and Boston (Grueby ware). The work of the French potters M.M. Chaplet and Bigot is also represented in this case. The fourth case is filled with metal-work, chiefly in the form of door furniture; many of the designs are by Monsieur Charpentier. The specimens of silver mounts for bedroom furniture are made by Monsieur Bing after designs by Monsieur Colman. The large stoneware vase on the pedestal is from the factory of Monsieur Georges Hoentschel, and the modelling is by Monsieur F. Deschamps.

The stencilled frieze round the room has been designed and made by Mr. T. T. Blaylock, a student in training in the Royal College of Art, South Kensington.

CHIPS.

Mr. Elwin T. Hall, F.R.I.B.A., has moved his offices to 54, Bedford-square, W.C., from 57, Moorgate-street.

At Barrow Dr. Whiteside, Bishop of Liverpool, laid the foundation-stone of a Roman Catholic chapel to be erected to the memory of the late Father Caffrey. The cost will be about £7,000.

At Silver Royd Hill, Wortley, Leeds, on Saturday, memorial-stones were laid in connection with a new Primitive Methodist chapel. The building, which stands on the site until recently occupied by the Sunday-school, has been designed by Messrs. Howdill and Howdill, architects, Leeds, and the work is being carried out by Mr. Pullan, of Boston. When complete the building will provide accommodation for about 650 people, being some 250 more than could be seated in the old chapel, which in future will be used for Sunday-school purposes.

The new bridge at Bristol across the Feeder, from Silverthorne-lane, St. Philip's, to Barton Hill, will be opened on Monday next. It has been constructed from plans by the city engineer, Mr. T. H. Yabbicom, the contractor being Mr. Auguste Krauss.

The premises of Mr. Ballan, builder and contractor, Belfast, were destroyed by fire on Friday night. The damage is estimated at £4,000.

The Victoria Cottage Hospital, Morecambe, is being warmed and ventilated by means of Stirling's patent Manchester grates, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

A new Primitive Methodist Church is now being erected at Handsworth, Yorks, with seating accommodation for about 300 persons. The building is to be of Yorkshire stone in the Gothic style, and to be heated on the low-pressure hot-water system, the total cost being £3,075. Mr. Fidler, of Ekington, is the contractor, and the work is being carried out under the superintendence of the architect, Mr. J. P. Earle, M.S.A., Sheffield.

Col. C. E. H. Luard, R.E., a Local Government Board Inspector, held an inquiry at the Parochial Offices, Warrley, on Friday, respecting the application of the rural district council to borrow £2,000 for certain improvements in the parishes of Mangotsfield and Oldland.

Kirklee Bridge, a new granite structure spanning the river Kelvin from Montgomery-street, Maryhill, to Kirklee Station, Kelvinside, was formally opened by the corporation of Glasgow on Friday. Mr. McCall, of Glasgow, was the engineer.

The five days' sale of the Ashburnham (Barrois) collection of manuscripts was concluded on Friday at Sotheby's. The total amount realised for the 628 lots was £33,217. A 14th-century MS. of "San Graal et Lancelot du Lac" brought £1,800.

At the town-hall, Warrington, on Friday, Lieutenant-Colonel Von Donop, an Inspector of the Board of Trade, conducted an inquiry into the application of the Corporation for sanction to borrow £66,050 for tramway purposes. This sum is the estimated cost of constructing electric tramways from Sankey Bridges, and thence across the centre of the town to Knutsford-road swing-bridge, Latchford, and also along Wilderspool Causeway.

OBITUARY.

The funeral took place on Friday at the Dean Cemetery, Edinburgh, of Mr. JOHN A. RUSSSET INGLIS, A.R.I.B.A., of the firm of Messrs. Williamson and Inglis, architects, Edinburgh and Kirkcaldy, and was largely attended by his professional brethren. His death took place on the previous Sunday under sad circumstances. In consequence of overwork, Mr. Inglis had for some time past been subject to insomnia, and an over-dose of a sleeping draught which he had been using led to the close of a career full of promise. He was to have been married on the Friday. Mr. Inglis, who was only thirty-one years of age, passed the earlier years of his professional career in the offices of Mr. J. B. Dunn and Mr. Hippolyte J. Blanc, R.S.A., afterwards going to London to continue his studies. He shortly went to Oxford, and was for a few years in the office of Mr. Wilkinson Moore. Being successful in 1897 in gaining the Soane medallion, which entitled him to a travelling studentship for six months abroad, he spent about one year in Italy and Sicily, returning to Scotland with excellent drawings of the buildings he had visited. On his return to Edinburgh he entered into a partnership with Mr. William Williamson, architect, Kirkcaldy, and the firm have since had offices in that town and in Edinburgh, and were lately successful in the competition for Kirkcaldy police buildings.

MR. JAMES JEMSON, an architect carrying on a large business in the Fyfe district, and surveyor to the Presall Urban District Council, met with a tragic death on Sunday. According to the police report, deceased, who was of a very cheerful disposition, frequently complained of being unable to sleep, and early on Sunday morning he went to Dr. Robinson, who mixed a sleeping draught of chloral in a bottle containing four doses. Mr. Jemson appears to have taken the whole mixture, the empty bottle being afterwards found. When in bed he began to cough and sneeze, and he expired before the doctor arrived.

THE death has occurred, at Heath-crescent, Stockport, of Mr. JOSEPH EMANUEL BYGATE, art master at Stockport Technical School for the last ten years. Mr. Bygate was also a member of the council of the Association of Art Masters. He was formerly assistant master in the Durham School of Art (where he wrote and illustrated a short architectural history of Durham Cathedral) and at St. Martin's School of Art, London, and had acted as instructor and examiner in art for the Royal College of Science. Mr. Bygate exhibited paintings at the Royal Society of British Artists, London, and at the Manchester, Derby, and Newcastle-on-Tyne exhibitions, both in oil and water colours. He was 38 years of age, and has left a widow and four children.

A distribution of Plumbers' Company certificates of registration to some 200 master and operative plumbers was held at the City Guildhall on Saturday afternoon.

At West Bromwich Parish Church the completion of the work of providing the chancel of the church with its permanent furniture has been celebrated. The organ was opened in December, 1898. The carved choir-stalls followed in May, 1900, and now the work has been brought to a conclusion by clothing the organ with a carved oak case. The whole of the work is from the designs of Mr. Enoch Wood, of West Bromwich, and the carving and other work has been carried out by Mr. Advent Hunstone, of Tideswell, near Buxton.

The Bishops of Peterborough and Leicester, the Marquis of Exeter, Viscount Melville, Lord Lilford, and Mr. Stopford-Sackville, M.P., took part in a meeting at Peterborough last week, to consider in what way the memory of the late Dean of Peterborough should be preserved. It was decided that the great services rendered by Dean Ingram in various ways to the cathedral and diocese could be most suitably acknowledged by the completion of the restoration of the west front of the cathedral, that being the work to which he especially devoted himself during the later years of his life. Subscriptions to the amount of £300 were promised in the room. A sum of £2,000 will suffice to do what is necessary for the west front, and about £4,000 is needed to complete the restoration of the whole of the cathedral fabric.

At the meeting of the Mersey Docks and Harbour Board, at Liverpool, the works committee recommended that the length of the Alfred Lock at Birkenhead be increased from 348ft. to 550ft., at an estimated cost of £11,500; and that the proposed new Brocklebank Graving Dock be increased in length at an estimated additional cost of £14,700. The Board approved of the proposals.

PROFESSIONAL AND TRADE SOCIETIES.

EDINBURGH ARCHITECTURAL ASSOCIATION. A large party of the members of this association left Edinburgh on Friday for their annual excursion. A departure from the usual one-day excursion was made, and the programme of visits extended for two days, Dornoch being visited on Friday and Haddington on Saturday. At the latter city the members had the privilege of being conducted over the Cathedral and Deanery by the Very Rev. Dean Kitchin. The library was also visited, where Canon Greenwell exhibited his splendid collection of sculptured stones. Afterwards the members were taken to the Deanery, and permission of the Rev. Dr. Plummer, and were shown over the building by the Rev. Mr. Godwin. In the evening, the members were taken to the other old parish churches were inspected, and the many churches and churches of the city about the city enjoyed. The company stayed overnight at the Royal County Hotel, and on the Saturday morning travelled to Hexham, where, by the courtesy of the Rev. E. Sidney Savage, M.A., the members were conducted over the Abbey by Mr. Charles Clement Hodges, architect. In the afternoon the party drove to Chesters, and saw the Roman station and museum, under Mr. R. Blair's leadership, permission for which had been granted by Mrs. Clayton, of Chesters. Mrs. Clayton also allowed the party to view her private residence, the additions to which form a fine example of Mr. R. Norman Shaw's work. The train was joined at Chollerford, and the return journey made via Riccarton Junction and Hawick.

There has just been completed in the works of Messrs. Alexander Macdonald and Co. (Limited), granite merchants, Aberdeen, and sent to London for shipment to South Africa, a memorial for the tomb of the late Prince Christian Victor, who died when on service in the Boer war. It takes the shape of a cross, made of granite obtained from a quarry at Balmoral. The cross will be erected in Pretoria Cathedral, where the young prince rests.

The Senate of Cambridge University has given authority to the Vice-Chancellor to enter into contracts for the erection of the proposed Law Schools, &c., on the Downing site, at a sum not to exceed £7,000. Subject to the approval of the Chancellor, the sum of £21,000 is to be appropriated from the Benefaction Fund towards the cost of the Botany School building, £16,000 towards the cost of the Medical School building, and other sums were voted for various other buildings.

The Liverpool business of Parr's Banking Company has been removed from Cook-street to the new building in Castle-street. The new premises, of circular design, of which Mr. Norman Shaw, R.A., London, and Messrs. Willink and Thicknesse, Liverpool, are the joint architects, Mr. W. A. Latta being clerk of works, contain several novel features. The exterior is of unpolished granite, tooled, surmounted by Pevanze marble, with bands of Capolino marble, the unique cornice being of Ruabon terracotta. Within Capolino marble and Breccia marbles are used, and all the woodwork, save the Spanish mahogany counter, with its moulding of boxwood, and the entering desks, is of fumed oak.

The foundation-stone was laid on the 6th inst. of a spacious block of buildings for the Jarro and Hebburn Co-operative Society at Hebburn Quay. The site is at the corner of Lyon-street and Albert-street, and measures 80ft. by 66ft. On the ground floor will be the grocery, butchery, confectionery, and drapery shops, with a loading dock connecting all the departments. On the second floor will be warehouses, millinery rooms, showrooms, and a boot department; while on the top flat there will be an assembly-hall, 77ft. by 37ft., and seating 700 persons. The structure will be surmounted by a turret in which it is intended to place a clock. The work is being done by the Society's employes from designs prepared by Mr. Geo. Cordiner, who is the clerk of works.

The corporation electric tramways at Manchester have been formally opened by the Lord Mayor of that city. The car-shed covers four acres of ground, and has a frontage of 975ft. to Boyle-street, and 330ft. to Queen's-road. The materials used for the Boyle-street elevation are grey-red bricks in the spaces between the piers, and stock bricks for the piers, gables, arches, and strings, and the front elevation and main gateway are of stock bricks. There is room for 262 cars. The building has mechanics' shops and stores and guards' and drivers' messrooms, besides other offices. There is also a house for the foreman. The total amount of the contracts has been £53,075, and the buildings were designed by Mr. J. Gibbons, of Manchester.

Building Intelligence.

clock tower, and the exterior is in Accrington style. The interior is finished with glass. In the basement, which is nearly level with the ground, there are rooms which are to be used for the inspector of weights and measures, rooms (including bathroom) for workmen, heating chamber, fire brigade station, ambulance station, and firemen's stores. On the ground floor are the gas office, meter inspector's room, the rates and water accounts office, the cashier's office, rooms for the sanitary inspector and the medical officer, and school board offices, together with a separate entrance for the public. Above the school board offices there is a spacious staircase with two return flights. The arched at the bottom of this staircase springs from red polished granite shafts and carved stone caps. On the first floor are the council chamber, with a panelled ceiling, the Mayor's parlour, the room for the law clerks and the committee clerks, the overseers' office, cloak-rooms, and two committee-rooms. The staircase is lighted by a painted glass dome in addition to the side windows. Messrs. John Eaton, Sons, and Cantrell, of Ashton-under-Lyne, were the architects, and Mr. H. Gough, of Manchester, has acted as clerk of the works.

HADDON, HANTS.—The parish church of Haddon on the Great North-road has been restored, and was reopened by the Bishop of Ely on Saturday last. The church is a fine Norman edifice, but the upper part of the tower is of the Jacobean period. Mr. J. C. Traylen, of Stamford, has been the architect, and the contractor was Mr. F. G. Hilditch, of Stamford. The work, which has cost £7,000, embraces a new north-aisle roof, with transept roof and nave roof; the interior has been thoroughly cleaned down, the tower has been restored, and one bell recast. There is new wood block paving and a pair of new prayer-desks, while the stained and tiled floor have been removed, and chairs substituted for the old seating accommodation. All the fresh woodwork is of English oak, and in the rebuilding of the nave roof the old characteristics were preserved. The windows have been reglazed, and Mr. L. Trower has given a stained-glass window, in memory of his brother, Lieut. Trower, who fell at Marston Hill. The design, which is by Mr. C. E. Kempe, represents the Crucifixion and St. George and St. Michael. After the wall had been cleaned and several layers of whitewashing removed, a number of frescoes were discovered on the east walls, but the treatment to which they had been subjected had made them indistinguishable.

BLOOMSBURY.—The new swimming-bath, the foundation-stone of which was laid on Wednesday, is an extension of the public baths and wash-houses erected in Endell-street by the Commissioners for Public Baths and Wash-houses for the Parishes of St. Giles-in-the-Fields and St. George, Bloomsbury, in the year 1852. The design of Messrs. John and S. Flint Clarkson, of Ormond Chambers, Great Ormond-street, having been accepted from several others submitted, a contract with Messrs. F. Gough and Co., of Hendon, for the erection of the baths was entered into. It is anticipated that the total cost of the bath and baths will amount to the sum of £25,000. The extension, which will have a frontage in Broad-street of 55ft., and a depth from north to south of 130ft., will provide a swimming-bath 90ft. in length, with closed dressing-boxes entered from the platforms. The bath will be paved with mosaic, the walls faced with glazed bricks, and domed ceilings of fibrous plaster will be formed above lantern lights. There will also be subways all round. The bath hall will be entered through a vestibule, and from Broad-street. The height of the bath hall will be about 40ft. from the bottom of the bath to the domes. The elevation towards Broad-street will be four stories in height, of Portland stone, red Bracknell bricks being used for the upper floors. The elevation will resemble the existing front in Endell-street, the addition being internally much stronger than it will be clear that the two frontages are parts of one building.

HEATON, NORTH-SHORE, TYNE.—The foundation-stones of a new church for the Methodist Free Church communion were laid last week at the corner of Simonside-terrace and Heaton-road, Heaton, Newcastle-on-Tyne, which has already been built, was opened. The church is planned in cruciform shape, with two large transepts and a wide nave. There will be two entrances in Heaton-road, into a vestibule giving access to the body of the church. The galleries will be entered from separate doors. The church is designed in the Late Gothic style, and will be lighted by stone tracery windows. The walls of the church will be of squared rubble stone-work, with dressed and rubbed mouldings. The internal fittings, including gallery fronts, rostrum, seats, &c., will be of pitchpine, and the roof will be an open timber one, moulded. The galleries will occupy each arm of the cross shape of the church, that at the back being for the accommodation of the choir and organ. At the corner of the roads will rise to a height of 63ft. a slenderly-proportioned octagonal tower and spire, with buttresses and pierced tracery. The church will provide accommodation for 700 persons. The Sunday-schools are arranged with the whole of the classrooms on the ground floor, with separate entrances to the different sections, including boys' and girls' rooms and infants' rooms. On the first floor is the school-hall. The buildings will be lighted throughout by electricity, and will be heated by hot water on the low-pressure system. The architects for the buildings are Messrs. Hope and Maxwell, Newcastle, and the builder is Mr. Alexander Bruce.

NORTHAMPTON.—The Northampton Town Council passed the plans of the alterations to the Opera House, Guild Hall-road, prepared by Mr. John P. Briggs, Effingham House, Arundel-street, Strand, W.C., at their monthly meeting held at the town-hall on June 3. The alterations are extensive; new entrances will be formed from Guild Hall-road, and new crush-rooms provided to dress circle and upper circle. The pit will be considerably enlarged, and two new exits formed from this portion of the house into Carter-street. Three rows of orchestra stalls are to be added, which will be a distinct improvement. The whole of the building is to be redecorated, and an installation of electric light provided. The theatre will be ready for opening early in the autumn.

NORWICH CATHEDRAL.—The Dean of Norwich has written to the local Press announcing "the accomplishment of a great work, viz., the complete reparation of the interior and exterior of Norwich Cathedral; the restoration of the cloister, one of the most precious types of varied styles of architecture in Europe, and the erection of an organ which for volume of sound, for sweetness, for tonal quality, and for variety of instrumentation has no superior in England." In 1893 he asked the public for £5,000. In 1901 he thanked them for giving him nearly four times that sum, and the work has, he believes, been well done. "No novelty has destroyed historicity. We have an ancient cathedral repaired. We have not a 19th-century edition of a 12th-century building. We have had our own staff of men from first to last." The Dean acknowledges his indebtedness to Mr. St. John Hope, to Dr. Bensly, and to one of the most remarkable men he had ever met—Mr. Wright, clerk of the works at Westminster Abbey. In all the work, involving ladders, platforms, staging up to the roof of both transepts, as well as in Sir Samuel and Lady Hoare's beautiful restoration of the nave to its 13th-century glory, they have not had one accident. "The only portion of the cathedral," he adds, "I leave undone is the great west front, which has been so maltreated. This ought to be undertaken, though hardly by me. I remit it, provisionally, to the next Dean and to the next generation. It might cost anything. But I believe I could restore it adequately, and in accordance with ancient Norman instincts, for £2,000 or £3,000. Two towers have been, as I believe, needlessly removed. Their bases are covered by a vulgar wooden casement, which is unable to resist the weather. In two places the ashlar is gone, and the core is exposed, in accordance with the 'open sore' policy, which meant perpetual pottering and wanton waste. Should an offer be made to undertake this piece of service in whole or in part, the Dean and Chapter would most gratefully accept it."

RANDOLPH.—Memorial-stones of a Wesleyan

chapel were laid on Friday in Fortescue-road. The church will consist of a nave and aisles on either side. The dimensions are 59ft. 9in. by 37ft. 3in., with a choir at the back raised above the nave, and in front of which will be placed the rostrum. There will be a gallery all round, supported by iron columns, and approached by three staircases. The chapel roof will be in one span, and will rise to a height of 30ft. 6in. to the ceiling, and 36ft. to the ridge of the roof. The ceiling will be panelled and divided into five bays by timber principals, supported by corbels on main walls, and on iron columns, with moulded caps and bases. The vitiated air will be drawn out by two of Boyle's patent self-acting foul-air extractors. The building will be lighted by a four-light tracery window in the front gable over the entrance, and by ten two-light tracery windows at the sides above the gallery, and also eight two-light square-headed windows in the aisles under the gallery. The chancel will be divided from the nave by a semicircular moulded arch resting on stone columns, and lighted from a three-light tracery window. The school is entered from Church-street, and is 48ft. long by 27ft. wide. The seats throughout will be of varnished pitch-pine. Sittings for 536 persons will be provided in the body and gallery of the church. The schoolroom will accommodate 269 children, apart from the end gallery, which will hold 84 more, making a total of 352. The floors will be of wood except in the entrance, where tiles will be laid. The walls throughout are to be of stone obtained from a local quarry. The dressings are to be of Bath stone. The style of architecture is an adaptation of Late Gothic and Renaissance. Mr. Robert Curwen, A.R.I.B.A., London, is the architect, and Mr. Tom Keeling, of Tisbury, near Bath, is the builder, while Mr. S. G. Gregory, of Coombe Hill House, Radstock, is acting as clerk of works. The cost will be £4,700.

TROON.—In December, 1899, the Glasgow and South-Western Railway Company commenced the erection of carriage repairing works at a point on their line half a mile from Barassie Station, and about the same distance from Troon Old Station. The works are now nearing completion, and in a month's time will be in full occupation. The buildings consist of two blocks, one being 350ft. long and 150ft. wide, in three stories, and the other about half that length, although the same breadth. The larger building is the main carriage lifting and repairing shop, and the smaller contains boiler-house, smithy, and machine shop. There will be in addition a pumping engine and tank, the water to be forced up from a well which has been sunk in the immediate vicinity. The buildings are to be lit by electricity. The number of men to be constantly employed will be about 150.

WALTON-ON-FINE HILL, LIVERPOOL.—The consecration of the new church of St. Luke the Evangelist, situated at the corner of City-road and Goodison-road, Walton, was performed on Friday by the Bishop of Liverpool (the Rev. Dr. Chavasse). The plan of the church consists of nave, north and south aisles, north and south transepts, chancel well raised above nave, organ-chamber, choir, and clergy vestries. The chancel aisle is not built at present. There are two entrances, and the font is at the west end of the nave adjoining the narthex screen. The total length of the church is 123ft. 2½in., and the total width 52ft. 6in. across nave and aisle, and 60ft. across transepts. The church is built of local brick, and the whole of the constructional wood-work is of pitchpine, the choir pews, reading-desk, and altar-table being of oak. The church has been erected by Mr. S. Webster, Bootle, from plans by Mr. J. Francis Doyle, of Liverpool; the heating carried out by Messrs. J. R. Cooper and Sons; the mosaic pavement in the chancel by Rust's Vitreous Mosaic Co., London; the choir seats, &c., by Jones and Willis; the electric lighting and fittings by the Well Fire and Electric Company; and the whole work has been done under the superintendence of Mr. Gilbert Morris, clerk of works.

WAKEFIELD.—The Archbishop of Canterbury laid, on Tuesday, the memorial-stone of the cathedral extension at Wakefield—a work which was set on foot by the late Bishop Walsham How, the first head of the new diocese, and which is designed to perpetuate his memory. Before it was constituted a cathedral church, in 1888, the 15th-century parish church of Wakefield, standing upon the site of a still more ancient church,

was known as one of the finest ecclesiastical buildings in the county. Its monuments include a figure of William de Melton, Archbishop of York, who consecrated the church after it had been rebuilt, 1329. Between the years 1858 and 1888 something like £30,000 was expended on the restoration of the church. The present extension, inaugurated 31 years ago, called for an expenditure of £40,000, and of this there only remains to be raised between £9,000 and £7,600. The late Mr. J. L. Pearson, R.A., planned the new work, providing for the extension of the chancel eastwards, and thus lengthening the choir, and the undertaking is being carried out under the direction of his son, Mr. Frank L. Pearson, M.A. There is to be a retro-choir, a continuation of which will provide a chapel, and the chancel aisles are to be extended to the same length as the retro-choir. This extension will take the form of north and south transepts, with eastern aisles. A Chapter-house and a couple of vestries are to be provided underneath the retro-choir. The altar will be removed one bay eastward, and then it will be separated from the chapel by an altar-screen. Under an arch on the north side of the sanctuary it is proposed to place a canopied tomb, with a recumbent effigy of the late Bishop Hew. The position of the bishop's throne and choir-stall will also be altered, and other internal improvements effected.

CHIPS.

Sir Alexander Blencourt, shrewdly resigns his position as engineer to the London County Council, in order to take up practice as a consulting engineer.

Building operations are being busily carried forward both at Felling and Pelaw, near Gateshead. The latter place is rapidly developing into a populous centre. Amongst the works in course of erection at Pelaw are the enormous ranges of buildings for the Wholesale Co-operative Society, which, on completion, are to find employment for a great number of people.

The city council of Bath elected at the meeting on Tuesday Mr. Tongue, of Pusley, as electrical engineer, at a salary of £50 per annum.

The adjourned Local Government Board inquiry held by Inspector R. H. Bicknell, M.I.C.E., with regard to the application by the South Stoneham Rural District Council to borrow £30,000 for purposes of sewage and sewage disposal, was resumed at the Philharmonic Hall, Southampton, last week.

The committee of the Hospital for Epilepsy and Paralysis, Regent's Park, having recently acquired a new site for the hospital at Maida Vale, will shortly take steps towards the erection of the new building, at a cost of about £30,000. Of this amount over £12,000 has already been subscribed.

The vice-chairman of the London School Board, on Monday night formally opened the Princess May-road Board School in Stoke Newington-road. The new school has a frontage to the main road. It provides accommodation in the main building for 301 boys, 301 girls, and 398 infants, and there is also a separate building for deficient children. The site cost £17,000, and the building £24,000.

On Wednesday week the ceremony of laying foundation-stones in connection with the new Wesleyan Methodist Church, Brockenhurst, which is being erected in Avenue-road, adjoining the station, took place. The church, which is being erected by Messrs. Barrow Brothers, of Ringwood, will, when completed, provide seating accommodation for 125. There is also a small classroom at the rear.

The waterworks committee of the Manchester Corporation have received tenders for the supply of iron pipes for the completion of the second pipe from Thirlmere to Manchester. The total quantity to be used is about 62,700 tons. The cost is estimated at £314,000.

Col. A. J. Hopper, D.S.O., R.E., Local Government Board inspector, held an inquiry at the Guildhall, Gloucester, into the corporation's proposal to spend nearly £12,000 in the purchase of land for the enlargement of the cemetery and for development as building sites, and to raise about £7,000 of the purchase money by the sale of Consols, which the corporation now holds. There was no opposition.

The past week's business at the Mart, in Tokenhouse-yard, has been the most important of the season, having regard to the quality as well as the quantity of the investments brought forward. The bulk of the superior investments placed on the market reverted to the vendors, but a large proportion of the ordinary securities changed ownership under the hammer. The returns, which were the result almost exclusively of transfers of real property, amounted to £233,000.

LEGAL INTELLIGENCE.

THE TIME LIMIT IN BUILDING CONTRACT. In the King's Bench Court on Friday, Mr. Justice Bruce and Mr. Justice Phillimore gave judgment in the case of "Sattin and another v. Poole," in which the plaintiffs sought to set aside a report and a judgment founded upon it of Mr. Verey, the Official Referee, in an arbitration between the parties. The plaintiffs were Mr. Joseph Sattin and Mr. Herbert Evershed, co-partners, who carry on business in Brighton as builders and contractors. The defendant was Mr. Geo. Thomas Poole, the owner of the St. James's Restaurant, St. James's-street, Brighton. Plaintiffs had contracted to rebuild the defendant's house, the contract between the parties being governed by the usual conditions as to a time-limit with regard to the completion of the works; a right given to the owner's architect (Mr. Clayton Botham) to grant "reasonable" extensions of time in the event of the work not being completed within the time specified; and a power of imposing a penalty of £12 per week on the period during which the work should remain incomplete after the time specified in the contract, or after any extension that should be certified by the architect. This penalty the owner had a right to deduct from any balance remaining due to the builder for work and labour done. The defendant paid in respect to the work done, the architect having given progressive certificates, leaving a balance of £681 due. In respect to that amount he claimed £231 by way of penalties on the certificate of the architect that the work could have been reasonably completed in the extended time, which expired on September 20, 1899. The defendant paid £450 into Court in satisfaction of the balance, and the case went before the Official Referee upon the point as to whether the penalties could be deducted under Clause 24 of the contract. The Official Referee, according to the plaintiffs' case, refused to hear the evidence offered on the part of the plaintiffs to show that the delay was caused by the owner or by his architect in ordering extras, in supplying material after the specified date, in delay in the selection of the stone to be used, and in the alteration of plans, and he found for the defendants on the architect's certificate. Two of the chief points raised by the plaintiffs in the appeal were that the architect could not properly be judge in his own cause, as it was contended he was, and the allegation that he was himself responsible for the delay, and yet had certified as to the work not having been completed within "reasonable time." Mr. Justice Phillimore, in his judgment, said the application was to set aside an award of one of the Official Referees and a judgment directed by him to be entered for the defendant on the ground that the Official Referee refused to admit evidence upon certain points which the builder wished to bring before him. He had refused to hear evidence to the effect that the delay was caused by the defendant; that he refused to hear evidence that the delay was caused by the architect; that he refused to hear evidence to show that the date fixed for completion was not reasonable; and that the defendant and his architect had waived their right in respect to penalties for delay. In regard to the latter point, he would deal with it at once, and say that they were both of opinion that there was nothing in it. These certificates were given according to a common practice, and were not conclusive as to the scheme in respect of which they were granted. They were only conclusive in so far as saying that at some time or other the builder might be entitled to his claim under his contract. The other matters raised by the case turned upon the agreement under the contract. The works were to be completed by May 20, but, by one of the clauses, the architect had power to extend the time, and the architect had certified that the work was not done within a reasonable time. His Lordship thought that the judgment of the Official Referee was right, and therefore the sum of £450 paid into Court was the proper sum due. Mr. Justice Bruce agreed, and judgment was given accordingly.

IS COMING A PUNCH OF UNLAWFUL NOT TO "PRACTISE" PORTSMOUTH V. SEWARD. This is an action of considerable interest to professional and business men generally, and to architects in particular, arising out of the success of Mr. Edwin Seward, F.R.I.B.A., of Cardiff, in the competition for plans of the new offices for the Swansea Harbour Trust. From the facts stated in the case it appears that up to the end of 1888 the late firm of Messrs. Seward and Thomas had an office at Swansea, and employed there as their manager Mr. H. C. Portsmouth, and that early in 1889 they arranged to give up the Swansea office and sell the business in Swansea to Mr. Portsmouth, and an agreement was entered into to carry out the arrangement whereby Messrs. Seward and Thomas bound themselves to discontinue practice in Swansea, and not to open or encourage anyone to open an office for the carrying on of their practice in Swansea as architects and surveyors so long as Mr. Portsmouth should remain in practice in Swansea, excepting only that they reserved the right to act in all cases in which they might be called upon or specially invited to act in either

branch of their profession. Messrs. Seward and Thomas accordingly ceased to hold themselves out as local practitioners at Swansea, but continued their business at Cardiff in partnership for some years longer, and for the past five or six years separately. In the autumn of 1900 the Swansea Harbour Trust required new offices, and decided to adopt the usual competitive method of obtaining plans, and issued in the local and professional papers invitations to architects to send in plans anonymously under certain conditions. Ninety-seven such plans were sent in, and the first premium was awarded to Mr. Edwin Seward, whose plans were adopted by the Swansea Harbour Trust. Mr. Portsmouth, after the result of the competition had been announced, commenced an action in the Chancery Division of the High Court of Justice, with the object of restraining Mr. Seward from acting for the Swansea Harbour Trust, alleging as his cause of action that Mr. Seward had broken the agreement entered into with him in 1889. On May 14 last, the plaintiff, Mr. Portsmouth, applied to Mr. Justice Kekewich for an injunction restraining Mr. Seward from practising at Swansea, and Mr. Justice Kekewich granted the injunction. From this order Mr. Seward appealed, and the appeal was heard before Lord Justice Rigby and Lord Justice Collins on Friday last, the 14th inst., with the result that the Lords Justices reversed the decision of Mr. Justice Kekewich, and discharged the order for the injunction. In giving judgment, Lord Justice Rigby said: In this case the defendant has been restrained from setting up an office and business in Swansea, and it is expressly provided that if anyone wishes that he should act for them in Swansea, he is not to be restrained from acting. The defendants, who have made over their Swansea business to the plaintiff, actually gave him notice at the time that they did not bargain never to act in Swansea for anyone, but if they were called upon they were to be entitled to do so. They were not to open an office, and not colourably to do what would be equivalent to that in any event; but here finding that there is to be a competition open to all the world for prizes, they send, not their names—they send in a sealed paper, as far as the name is concerned—but they send in a design, which those who read it can see fulfils their requirements, and they say they are entitled to do that. I think it is not within any bargain that they have made, and that the attempt to restrain their business in such a manner goes beyond anything they have agreed to.—Lord Justice Collins said: I am of the same opinion. I think, when the whole of this agreement is taken together, it is sufficiently clear, though I agree that ingenious minds may, by refining upon it, make it somewhat difficult to construe, much more difficult than it would seem to any person who read it over for the first time. You find the defendants actually carrying on business in Swansea as architects, with an office open there for that purpose, and they have also a business in Cardiff. The Swansea branch of their business is under the management of the plaintiff. They are desirous, both parties knew it, of continuing to carry on their business at Cardiff, they are not going to renounce their business as architects, in which they have acquired distinction in that part of the world, and whilst they intend to remain as local practitioners at Cardiff, they do not renounce their general rights as architects in this kingdom to accept business on special occasions, if they should arise, in Swansea, as in other places throughout the country. It is quite obvious what the parties intended. Let me address myself to what they have actually said when we realise what the position was. Their manager, on the other hand, was anxious to step into their shoes as far as the local business at Swansea was concerned. They thereupon make an agreement, every clause of which, as has been pointed out by Mr. Colt, is directed to giving effect to that general position. They agree to sell their business in Swansea. They make provision for handing over the tenancy of the office which they occupy in Swansea to the purchaser, and they agree to send out a notice of the fact that they have transferred their business at Swansea to the purchaser. All perfectly consistent with the intention to remain architects carrying on business in the adjoining town of Cardiff, and what they renounce in terms is that they discontinue practising. Now I think broadly, as a matter of common-sense, there is a distinction between practising and taking isolated duties with respect to particular jobs, if I may use the term, with regard to an architect, and I think the question might arise, if it had to be tried by a jury, whether there was a breach of the covenant not to practise; it would be a question for the common-sense of the jury to say whether the acceptance of an isolated job was practically within the meaning of the agreement. I can perfectly conceive that, under certain conditions, if it were done often, a jury might say that it was practising. If, on the other hand, they found that a distinguished consulting architect happened to give advice as to some matter in Swansea once, twice, or three times, I think they might perfectly well say that that was not practising. You have to apply your mind to it without parting with your common-sense in dealing with

introduced into it, whether after that analysis or not, should be made quite clear that we do not intend to renounce the right to do this; we do renounce the

perfectly understood that we propose to do it. We are not going to give that up. You shall step into our shoes in the enjoyment of the office; we shall not open an office, and we shall cease to practise in Swansea; but we are going to accept any call upon us or any special invitation in Swansea. That is the scope of the agreement. What happened then?

to be done under their sanction. There is no special bargain on the face of the advertisement that the architect who gets the prize is to be employed; but by conditions which were modified after the original advertisement there is a statement that, subject to certain conditions as to his fitness and ability, he is to be employed. It may be that the conditions are such that Mr. James points out that it is only a general invitation to enable the Harbour Trustees to select a person, but it is not a general invitation, there seems to be nothing whatever to bar this gentleman from sending in his credentials. When he has done it, it so happens that he has won the prize. Thereupon, what follows? It seems to me a special invitation to him to do the work, so that if I relied on the special words of this agreement, it seems to me to hit the very thing that is done; but, taking the agreement as a whole, it is not at all. It is not necessary to rely on that, because I think when you take the agreement altogether, what they have done is something which they were distinctly entitled to do under the agreement. Therefore I think the learned Judge was wrong in granting the injunction which he has done.

ARBITRATION CASE FROM BIRTLEY.—TODD, FOWLER, AND CO. AND NORTH-EASTERN RAILWAY. The hearing of this arbitration between the above parties took place on Thursday and Friday at the Central Station, Newcastle, Mr. Fowler, of Leeds, being the arbitrator. The claimants, who own large brickworks at Birtley, sought compensation for portion of their freehold and leasehold land which is to be taken by the company for the widening of their main line. Evidence in support of the claim was given by Messrs. Robert Wilson and John Todd, two of the partners in the claimants' firm, who estimated the total loss to be sustained by them would amount to about £16,000. Messrs. R. J. Ward, A. S. Dinning, J. T. Cackett, S. H. Hedley, J. Blythe, C. Robson, W. Forster, and T. Wallace also gave evidence in support of the claimant's case. Mr. Banks, K.C., opened the case for the railway company, and called as evidence in support Messrs. W. Sewell, John Ferguson, J. H. Armour, Mr. Watson, and Mr. Burnett. A long discussion then ensued upon the legal question as to whether clay is a mineral, counsel asking the arbitrator to reserve this point for the Divisional Court.

SUBSCRIPTION BY GAS ESSENTIALS. BACHELLER AND OTHERS V. TURNER, WELLS GAS COMPANY. In this action, tried by Mr. Justice Farnwell on Friday, the plaintiff, Robert Batcheller, is the owner, and the other plaintiffs are the occupiers, of two houses at Pembury, near Tunbridge Wells. The sole water supply of the two houses is derived from a well about 210 yd. distant from them, and the water is brought to the houses by a pipe, which for about 200 yd. is laid under the road leading from Pembury to Lamberhurst. The defendant company are the owners of certain gas mains and service-pipes, which are also laid under the same highway close to the plaintiffs' water-pipe. The plaintiffs alleged that, owing to the negligence of the defendants and the defective state of their pipes, the water supply of the two houses had been polluted with coal-gas and rendered unfit for use, and they claimed an injunction to restrain the defendants from so polluting their water supply. Evidence was tendered by the defendants to show (1) that their pipes were well laid, and that, in course of time, some escape or diffusion of gas was unavoidable, by which the surrounding soil was impregnated; (2) that the plaintiffs' water-pipe was itself defective; and (3) that the plaintiffs' water supply was thereby rendered unfit for domestic use, but in each case the evidence was disallowed. During the course of the trial the plaintiffs admitted that since the issue of the writ the defendants had stripped their main, and that the alleged nuisance

did not exist. Mr. Justice Farnwell, in his judgment, said that there could be no doubt that the water had been contaminated with coal-gas. Evidence had been tendered by the defendant company to meet the case made by the plaintiffs, but all the evidence tendered was irrelevant. It was quite true that the defendants had statutory authority to lay down pipes, and were required to supply gas to houses situated within a certain distance of their mains. But they were also bound by section 9 of the Gasworks Clauses Act, 1871, which provided that, "nothing in this or the special Act shall exonerate the undertakers from any indictment, action or other proceeding for nuisance in the event of any nuisance being caused by them," and by virtue of that section and of the judgment of the Court of Appeal in "Jordeson v. Sutton, &c., Gas Company" (1899), the defendants had no statutory authority to create a nuisance. In the present case the existence of a nuisance had been clearly proved, and it was no answer to say that the gas-mains were well laid, and that in course of time some escape or diffusion of gas was unavoidable. Then evidence had been tendered to show that the plaintiffs' water-pipe was defective; but in this respect the case was governed by what Lord Cairns had said in "Fletcher v. Rylands." The laying of gas-pipes was a non-natural use of the land, and the company laid pipes at their own peril. The plaintiffs owed no duty to the defendants to make their water-pipe gastight, and evidence could not be admitted as to the condition of the water-pipe. Lastly, the point had been taken that the plaintiffs' water supply was otherwise unfit for domestic purposes. But that was quite immaterial to the present issue, as the facts proved that it was contaminated by gas. As the nuisance had ceased, the plaintiffs did not now press for an injunction; but there would be a declaration that the defendants were not entitled to pollute the plaintiffs' water with coal-gas, with liberty to apply.

A DISPUTED CEMENT CONTRACT.—In the Commercial Court on Thursday in last week, before Mr. Justice Mathew, the actions, Tolhurst v. the Associated Portland Cement Manufacturers (1900) (Limited) and the Associated Portland Cement Manufacturers (1900) (Limited), and the Imperial Portland Cement Company (Limited) v. Tolhurst were heard. The question raised in the actions, which were tried together, was whether the Associated Portland Cement Manufacturers (1900) (Limited) were entitled to call upon Tolhurst to supply them with chalk under an agreement entered into in January, 1898, by Tolhurst with the Imperial Portland Cement Company (Limited). His Lordship was clearly of opinion that the new company were endeavouring to put upon Tolhurst a contract which he had never entered into, and that he was therefore entitled to say that he was not bound to the new company. There must be judgment for Tolhurst in both actions.

THE CLAIM AGAINST LEICESTER CORPORATION.—Sir Frederick Bramwell submitted on Tuesday his award in the arbitration which recently took place between Sir Tristram Tempest, Tong Hall, Leeds, and the Leicester Corporation for the compulsory purchase of the Beaumont Leys estate for the purpose of sewage disposal. The amount of the umpire's award is £148,946. The witnesses for the vendor made valuations ranging from £384,432 to £416,412, while the witnesses for the corporation of Leicester set the value at between £87,300 to £103,385. The area was 1,270 acres.

WORKHOUSE PLANS AND URBAN AUTHORITIES. At the West Riding Petty Sessions, held on Tuesday, at Leeds Town-hall, the Hunslet Guardians were summoned, at the instance of the Rothwell Urban District Council, for non-compliance with the by-laws of the latter body. The alleged offence was that the guardians, when asked to submit plans of the new workhouse they are erecting at Rothwell Haigh, sent merely a block plan, instead of the ordinary plans and sections. Mr. Child submitted that the council should have preceded against the builders, and not against the guardians. The summons was therefore informal. Apart from that, the plans had already been passed by the Local Government Board, and that, he contended, was sufficient. The case was dismissed, but the Justices refused the defendants' costs.

The new nave and aisle of the parish church, Eastleigh, will be opened to-morrow (Saturday) afternoon, by the Lord Bishop of Winchester. The enlarged building will accommodate 850 persons; but it will as yet be without the chancel, a temporary one being erected at the east end of the new nave. The new nave is of stone, and is seated with chairs, the floors being of pitchpine blocks.

The foundation-stone of a new church institute for Holy Trinity parish, in Winchester-street, Southampton, was laid on Wednesday week. The institute will be constructed of red brick with stone dressings, and has a frontage of 90 ft. Mr. C. H. Brightiff is the architect, and Messrs. Dyer and Sons, also of Southampton, are the builders.

PARLIAMENTARY NOTES.

THE NEW GOVERNMENT OFFICES. Mr. Whitmore (Chelsea) asked the First Commissioner of Works on Friday whether he could state what arrangements were being made to insure the satisfactory execution of the designs of Mr. Young and Mr. Brydon for the new Government Offices. Mr. Akers-Douglas: To my great regret, both Mr. Young and Mr. Brydon, the architects originally selected to carry out the building of the new War Office and the Government Offices in Parliament-street have recently died. My hon. friend will remember that Sir John Taylor was specially appointed to act with them as consulting architect. In the case of the War Office, Mr. Clyde Young, the son and partner of the original architect, is now carrying out the work in conjunction with Sir John Taylor. No definite decision has been come to with regard to the Government Offices in Parliament-street, the question being now under the consideration of the Treasury and of my Department. The completed plans and drawings are in the hands of the Office of Works, and can be carried out either by the Department's architect or by an architect specially selected for the purpose.

THE NATIONAL GALLERY.—Mr. Middlemore asked the First Commissioner of Works on Monday whether the National Gallery would be completely isolated from the buildings which now adjoined it by effecting the changes which would be authorised by the passage of the National Gallery (Purchase of Adjacent Land) Bill; and would he state what distance from the National Gallery would the nearest building be. Mr. Akers-Douglas: The National Gallery will be completely isolated from the buildings which are adjacent to it on the west: the nearest building will be the south-east angle of a stable which will be 35 ft. from the north-west corner of the National Gallery. With this exception the space between the buildings will be about 40 ft. In reply to Lord Balcarras, Mr. Akers-Douglas said that the barracks adjoining the National Gallery would be pulled down at the end of the present year.—The National Gallery (Purchase of Adjacent Land) Bill was read a second time the same evening, and referred to a Select Committee.

THE ALTERATIONS OF THE MALL.—Major Balfour asked the First Commissioner of Works on Monday, in view of the proposals for altering the Mall in the neighbourhood of Buckingham Palace, whether he could arrange that there should be a public exhibition of the designs before they are finally approved. Mr. Akers-Douglas: Should any decision be come to in regard to the memorial of Queen Victoria which will involve an alteration of the Mall, I think I can undertake to exhibit the proposed design for the information of the House.

CHIPS.

The death occurred suddenly, on Monday, of Mr. Robert Jackson, manager of the Goole saw-mills and timber yards of Messrs. Illingworth, Ingham, and Co., of Leeds, from which city he came some sixteen years ago. From the inauguration of Goole Urban District Council he was a member, and had been chairman for two years. He leaves a widow and seven children.

At Tuesday's meeting of the London County Council the parks committee reported that they had purchased the garden at Albert-square, Commercial-road, E., under compulsory powers, for £10,560, the amount of the award of the umpire. The valuations on behalf of the Council ranged from £7,603 to £8,250, the sealed offer amounting to £8,750. The original vote for the acquisition of the land was £7,000, and, after discussion, an excess vote of £1,560 to cover the extra cost and legal expenses was adopted.

Earl Carrington formally opened on Tuesday night the new premises of St. John's Institute, in Larcom-street, Walworth. The new building and freehold site are the gift of Mr. Edward Lloyd, the cost being about £8,500. The premises, which have a frontage of 66 ft., and consist of four floors and a basement, afford accommodation for concerts, lectures, reading, gymnastic exercises, and other recreations.

The Edinburgh District Lunacy Board discussed at great length, at their meeting on Monday, a proposition that the architect for the new asylum at Bangor, Mr. Hippolyte J. Blanc, of Edinburgh, should be entrusted to carry out by direct labour the foundations of the kitchen, laundry, bakery, and power-station. Eventually the motion was adopted, a proposal to invite tenders for the work being withdrawn.

The choir and sanctuary of St. George's Church, Truro, were reopened on Sunday after being altered. The floors have been raised 6 in. and retiled, a low, Bath-stone screen has been placed at the entrance to the choir, where a tall screen formerly stood, and a new altar and altar-rails are provided. The altar and retable are of oak, from designs by the vicar, the Rev. F. W. Newman.

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ILLUSTRATIONS.

NEW BROUGH MARKET HALL, LEEDS.—NEW GREEK CHURCH, ATHENS.—SEVEN END, WORCESTERSHIRE.—PROPOSED NEW PREMISES FOR THE SCUNTHORPE CO-OPERATIVE SOCIETY, LIMITED.—WROUGHT-IRONWORK FOR CHURCH DOOR.

Our Illustrations.

NEW BROUGH MARKET HALL, LEEDS.

This great municipal undertaking now in progress was illustrated by two double-page views in the *Building News* for April 20th. The architects are Messrs. Leeming and Leeming. We give to-day a detailed view of the interior, and refer our readers to the description printed with the previous perspectives.

NEW GREEK CHURCH AT ATHENS.

The accompanying photographic illustrations show an exterior and interior of the new Domed Church at Athens, designed by Professor Ernst Ziller, the well-known architect. The plan gives the arrangement of the building. The interior is richly incased with marble linings, and the pendentives of the cupola have impersonations of the Four Evangelists. The iconostasis in front of the high altar and sanctuary is segmented on plan. Its front is enriched with a series of figure paintings, the apse beyond being occupied by a representation of the Holy Trinity.

SEVEN END, WORCESTERSHIRE.

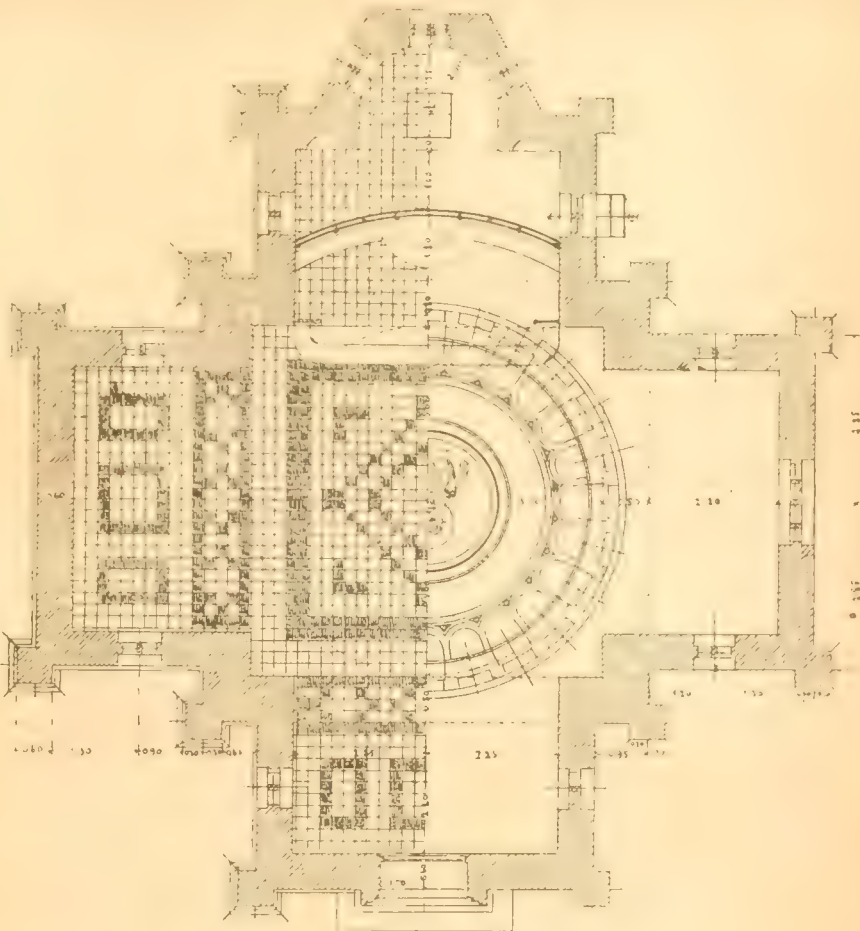
We published the plan and four views of this historic old mansion in the *Building News* for May 31, together with a lengthy and very interesting account of the building, by Mr. Lewis Sheppard, the architect of the late restorations of the house after the fire, which destroyed so much of its ancient parts. To-day we give an interior of the breakfast-room, and a view of the garden front from over the wall dividing off the grassed inclosure which was used for so many years as a kitchen garden.

SCUNTHORPE CO-OPERATIVE BUILDING.

THESE new premises are about to be erected at Scunthorpe for the Co-operative Society. The building consists of grocers', confectioners', and butchers' shops, together with extensive flour and provision stores, the upper story being used for warehouse room, secretary's office, and board-room. At the back of the building stabling accommodation is provided. The Society owns several large stores in the district, and it is proposed to make this building, when erected, their headquarters. Mr. John M. Dossor, A.R.I.B.A., is the architect.

ART FOLIAGE NEW SERIES.—BY J. K. COLLING.

PLATE 3.—Wood Friezes: These are from the stalls of King's College Chapel, Cambridge, which are said to be by Hans Holbein. They are exquisitely finished, and very delicately executed, in a hard and fine-grained wood. The style is Renaissance. Plate 4.—These panels are composed somewhat after the same manner as the small friezes from King's College Chapel, but with more and bolder leafage, which is taken from the hawthorn.



NEW GREEK CHURCH, ATHENS.

NATIONAL SHAW MEDAL DESIGN FOR WROUGHT IRONWORK TO CHURCH DOOR.

This is a very original and ingenious design for beaten, pierced, and chased ironwork, illustrating the four evangelistic symbols in panels forming part of the hinge-plates for an oaken door to a church. The parts drawn to the larger scale clearly show how the author, Mr. Arthur E. Payne, of Hove, Sussex, has introduced the figure work, adapting the subjects to the nature of the material and purpose to which it is applied. The general drawing of the door exhibits how the hinges come. The bolts on the outer edges are shown to pass through the joint of the boarding forming the door. This would have been better avoided, but the merit of the design is not interfered with by such an incident, as obviously the jointing of the door could be readily modified.

CHIPS.

The High School for Girls, South Side, Clapham Common, S.W., is about to be rebuilt from plans by Mr. F. J. Osborne Smith, of Old Queen-street, Westminster, architect to the Public Day Schools Company.

At Warrington, on Monday, Colonel Marsh conducted an inquiry into the application of the corporation for sanction to borrow £7,000 for the extension of the public baths. The town-clerk stated that in consequence of strong opposition to the erection of Turkish baths, the committee had withdrawn that portion of the scheme, and the application was therefore reduced by £1,152. The remaining portion was for necessary extensions to existing baths.

The inquiry which has been directed by the Local Government Board to take place concerning the proposal of the Corporation of Liverpool to bring the district of Garston within the area of the city, is to be held by Mr. H. H. Law, M.Inst.C.E., at the town-hall, Liverpool, on Wednesday next, the 26th inst.

On Sunday a new clock which has been placed in the tower of Christ Church, Lowestoft, was dedicated. The clock, which has a bold dial, has cost about £120. It possesses Cambridge chimes, which can be silenced during service hours. It has been erected by Messrs. John Smith and Sons, of the Midland Clock Works, Derby.

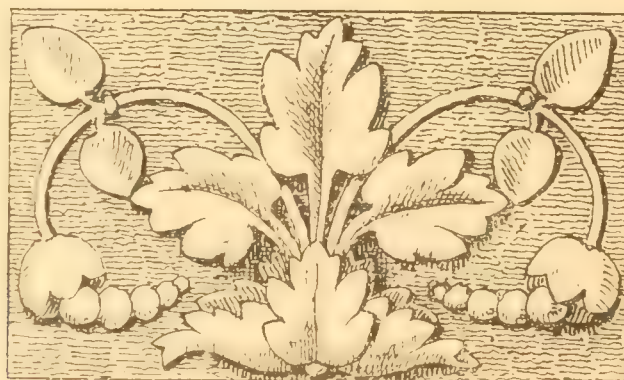
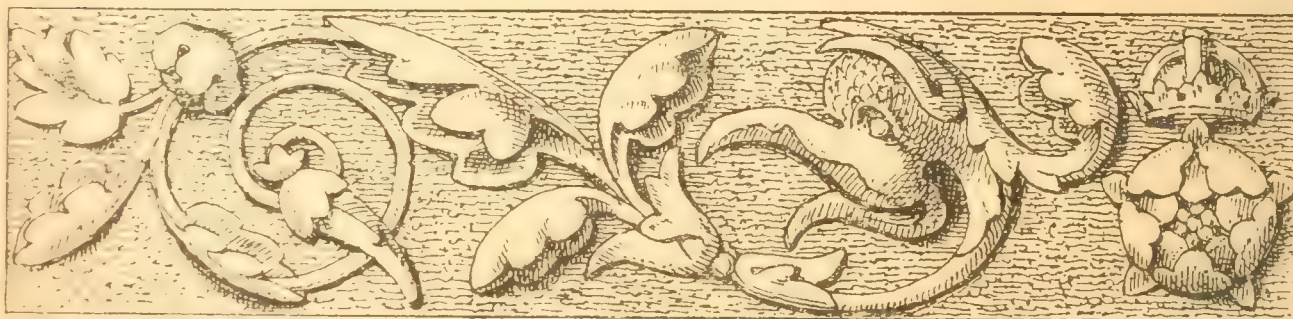
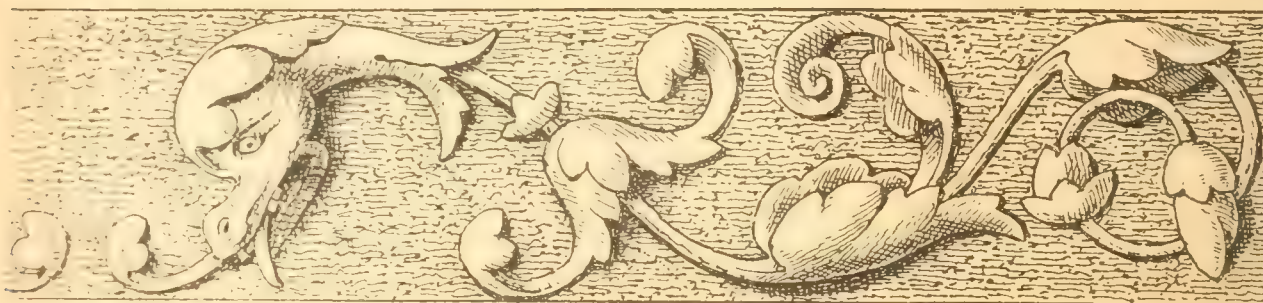
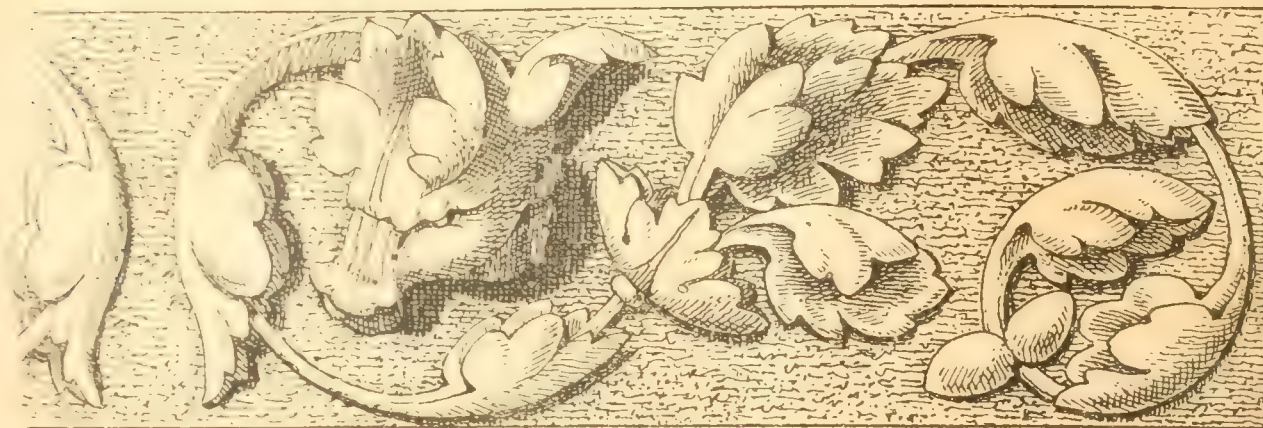
COMPETITIONS.

DARLINGTON. The town council have awarded the first premium for the plans of new buildings in Parkgate, a thoroughfare now in process of being widened, to Mr. Waddington, of Blackpool, the second premium falling to Mr. Holmes, of Darlington.

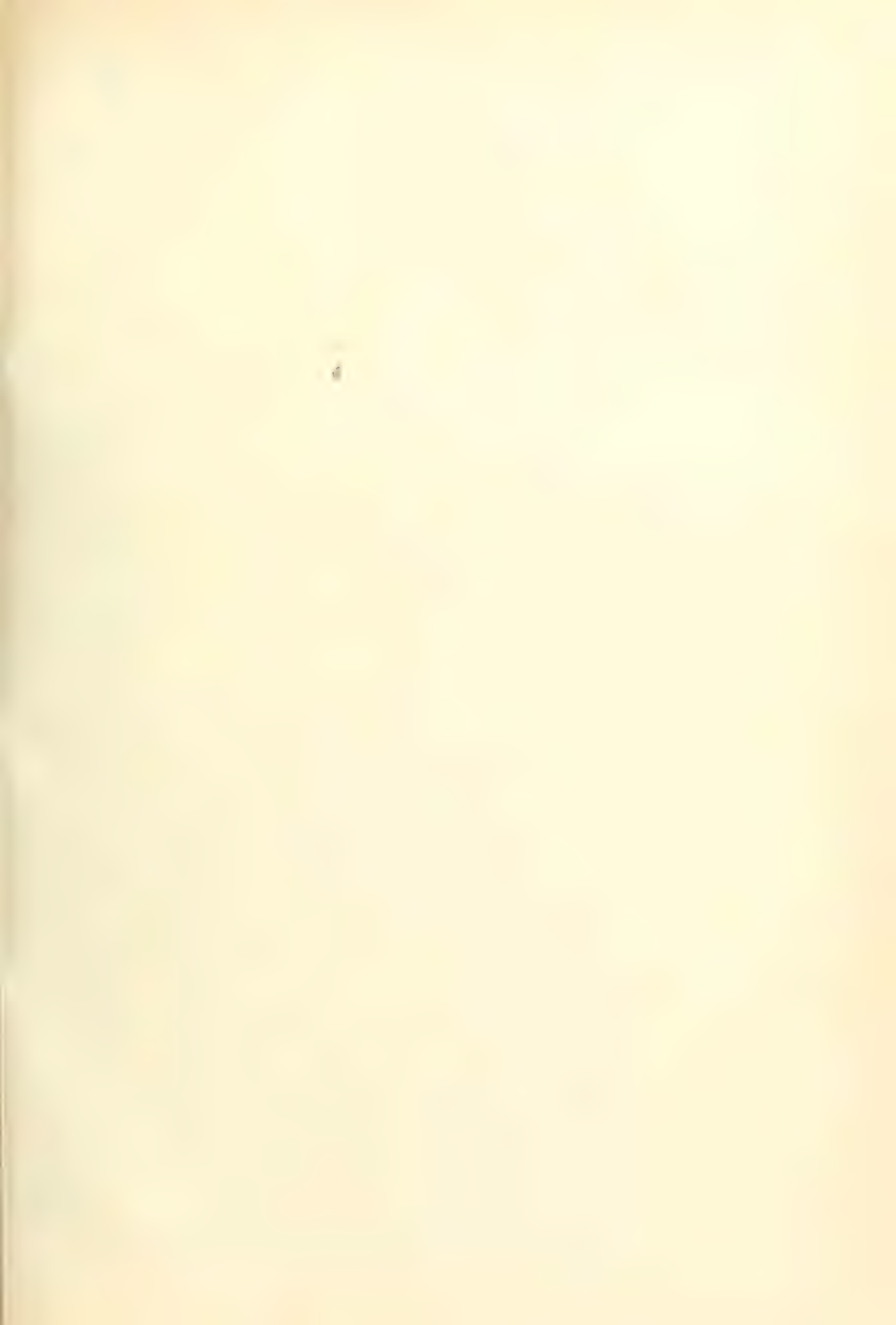
LOUGHBOROUGH, LEICESTERSHIRE. At the last meeting of the Loughborough School Board the general purposes committee stated that Mr. Evans, the assessor, had reported to them on the plans sent in for the proposed new Board school, cookery school, and pupil teachers' centre to be built on the Toothill-road Estate, from which it appeared that Mr. Evans had awarded the first place to Alpha No. 1, and the second to Alpha No. 2. The clerk reported that both these plans were sent in by Messrs. Barrowcliff and Allcock. It was thereupon resolved to award the premium offered of £25 to Messrs. Barrowcliff and Allcock. The further consideration of the plans was adjourned, and it was resolved, with the consent of the architects competing, to invite the ratepayers to inspect the plans, and to place the same on view in the board-room. The schools will accommodate 510 children in a mixed department, and 260 infants.

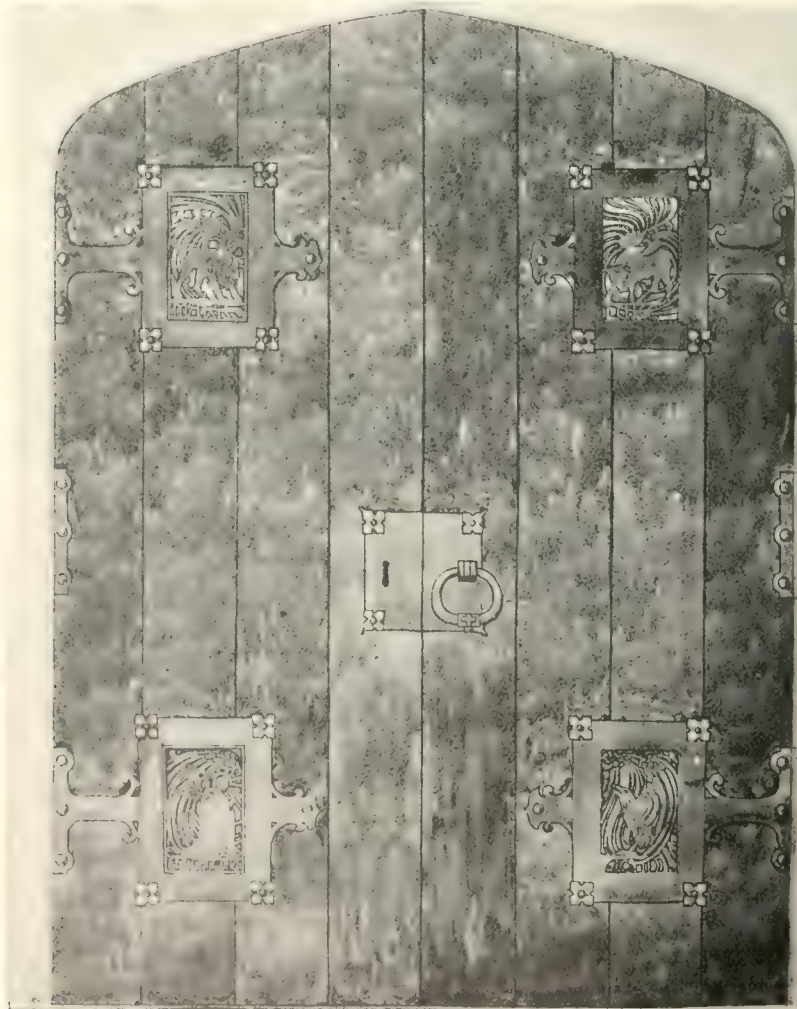
Gen. Sir Henry Norman, Governor of Chelsea Hospital, will unveil to-day (Friday) at 11 a.m., the monument erected, at the instance of the commissioners of the hospital, in memory of the 2,625 in-pensioners who were buried in Brompton Cemetery between January, 1855, and July, 1893. The monument has been erected at the north end of the cemetery.

Messrs. Goodall, Lamb, and Heighway, Ltd., are completing at the new kursaal, Southend-on-Sea, the largest spring dancing floor in this country. It has been entirely constructed by them, and is covered with lin. tongued-and-grooved parquetry, with a specially-designed centre of oak, walnut, and sycamore, in the form of a double star. The filling is what is known as the ship-deck pattern, with the joints matched. The border is about 3ft. wide, of a bold pattern, in oak and walnut. The portion where the public would stand on the outside of the border is laid with the ordinary herring-bone pattern, and is on the same level as the dancing floor. Mr. Geo. Sherrin is the architect.



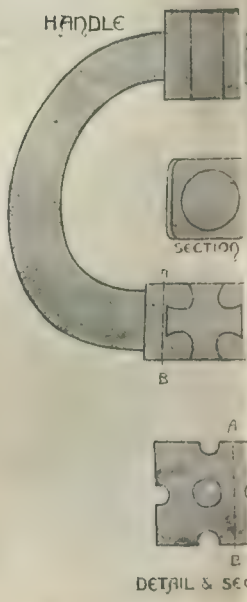
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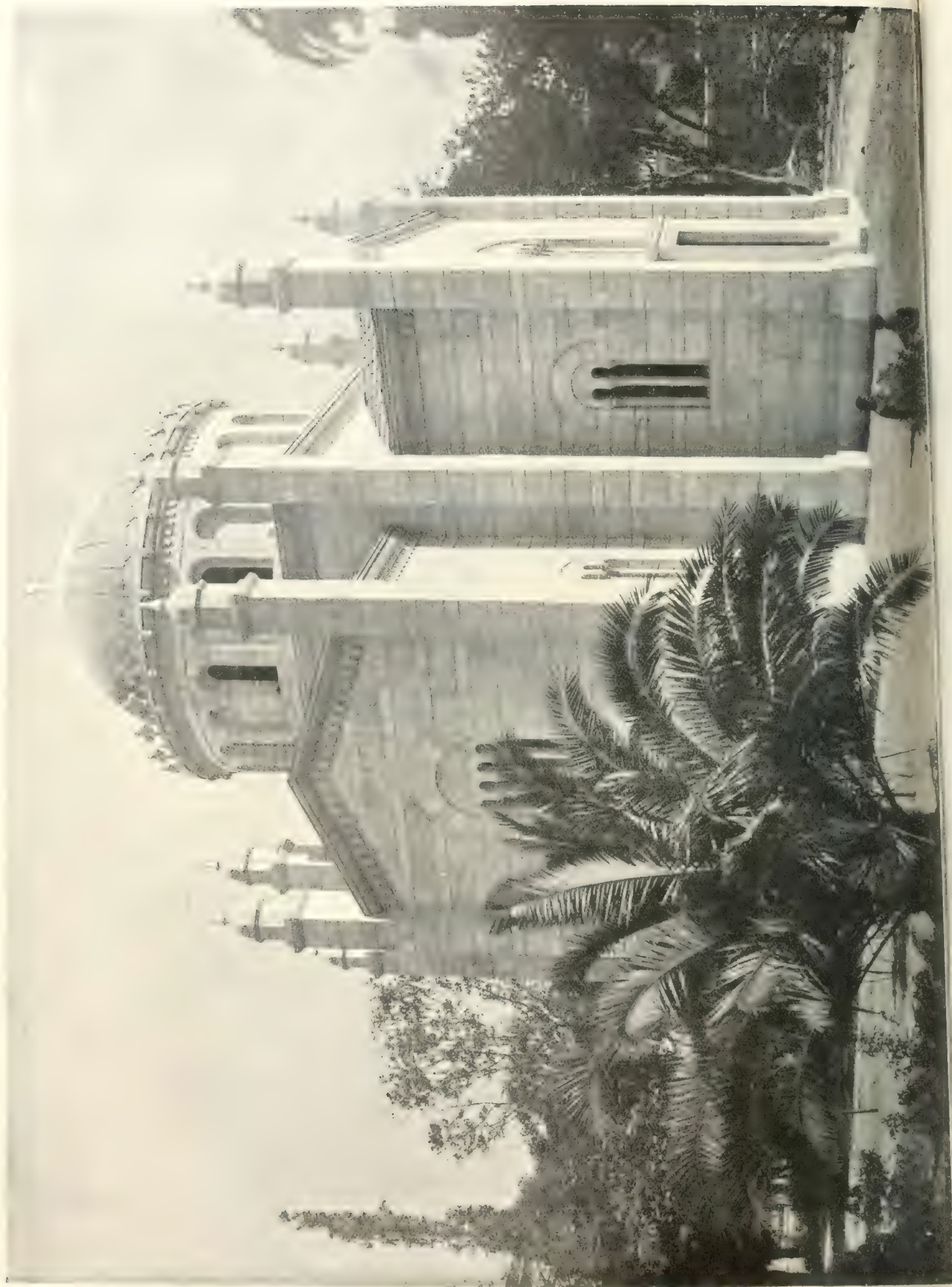


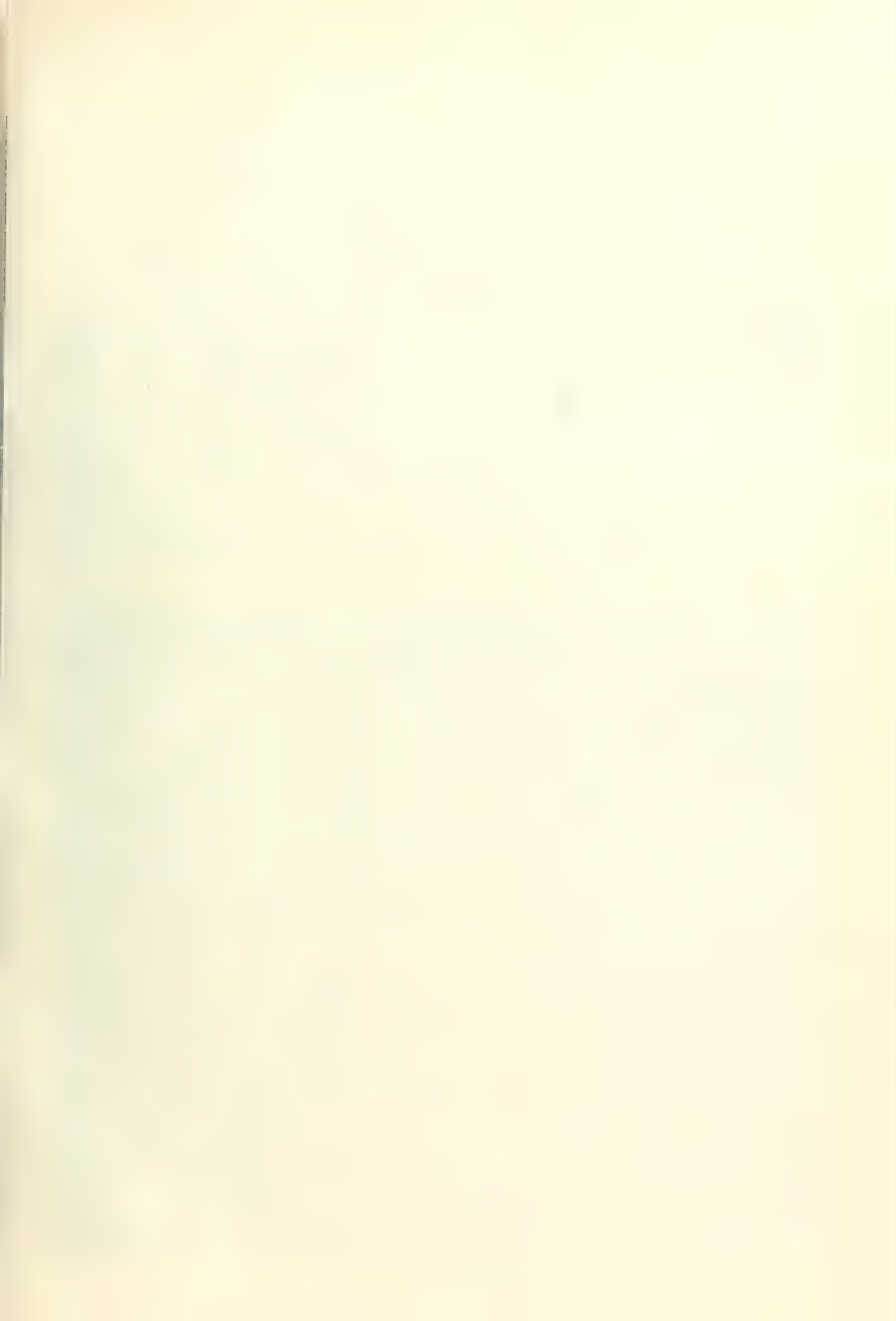


SHEET 1

DESIGN FOR AN
CHURCH DOOR
DECORATION IN
PIERCED & CHASE
HANDLE TO BE C





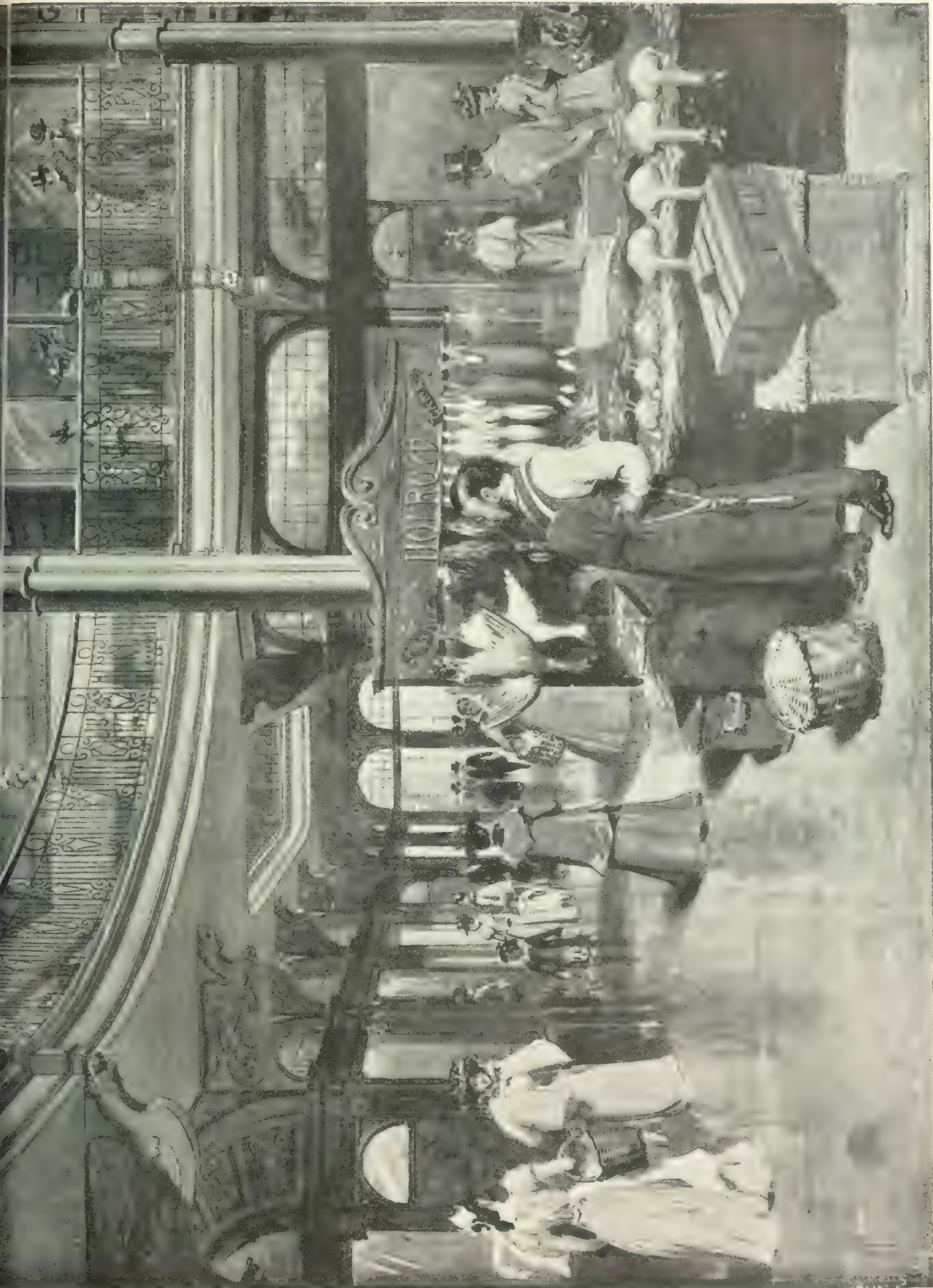




SEVERN END, WORCESTERSHIRE.
 RESTORED BY MESSRS. LEWIS SHEPPARD AND SON, ARCHITECTS.
 (*The Breakfast Room, and View from Old Kitchen Garden.*)

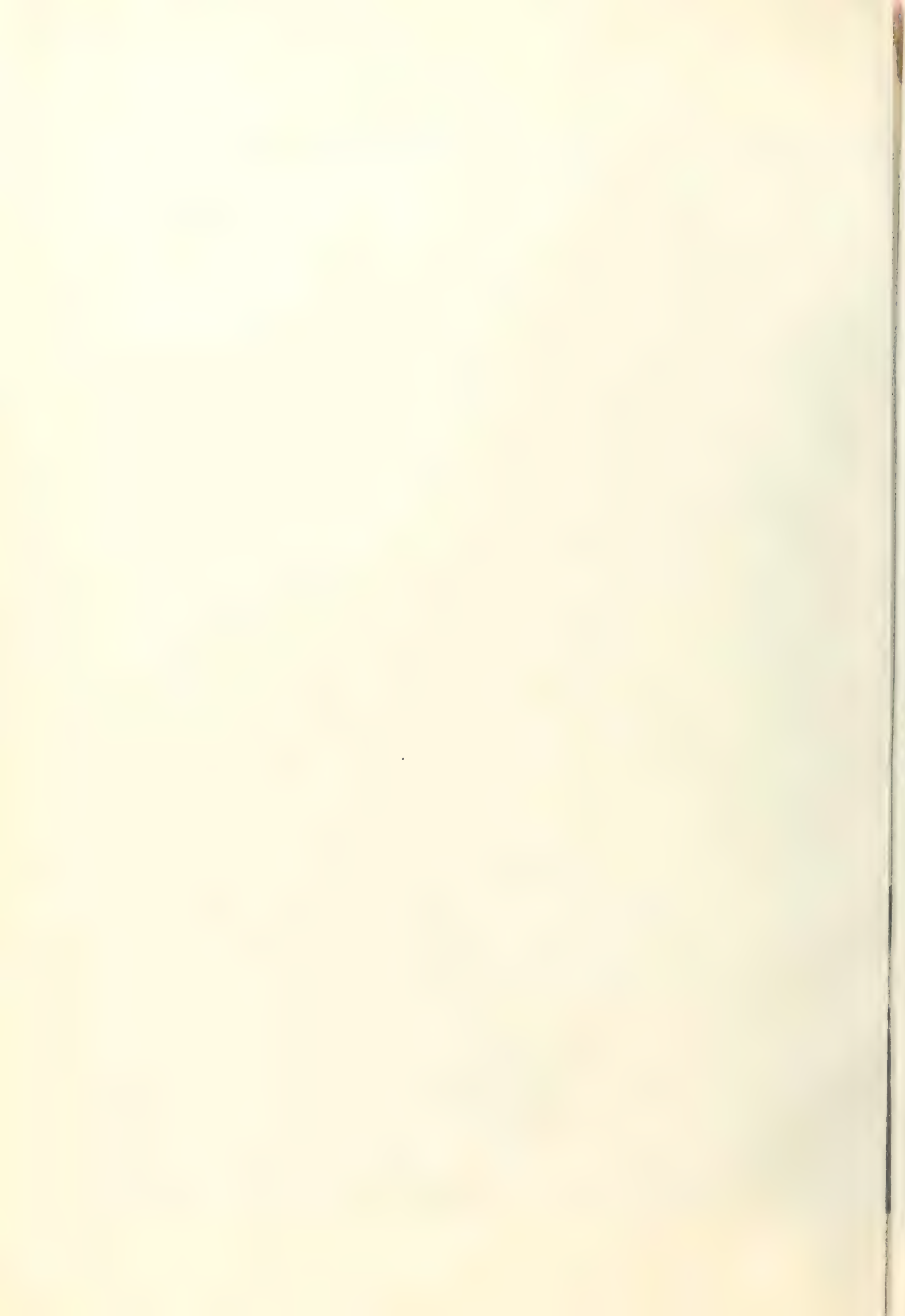
The London Scottish Engraving Coy., Ltd.



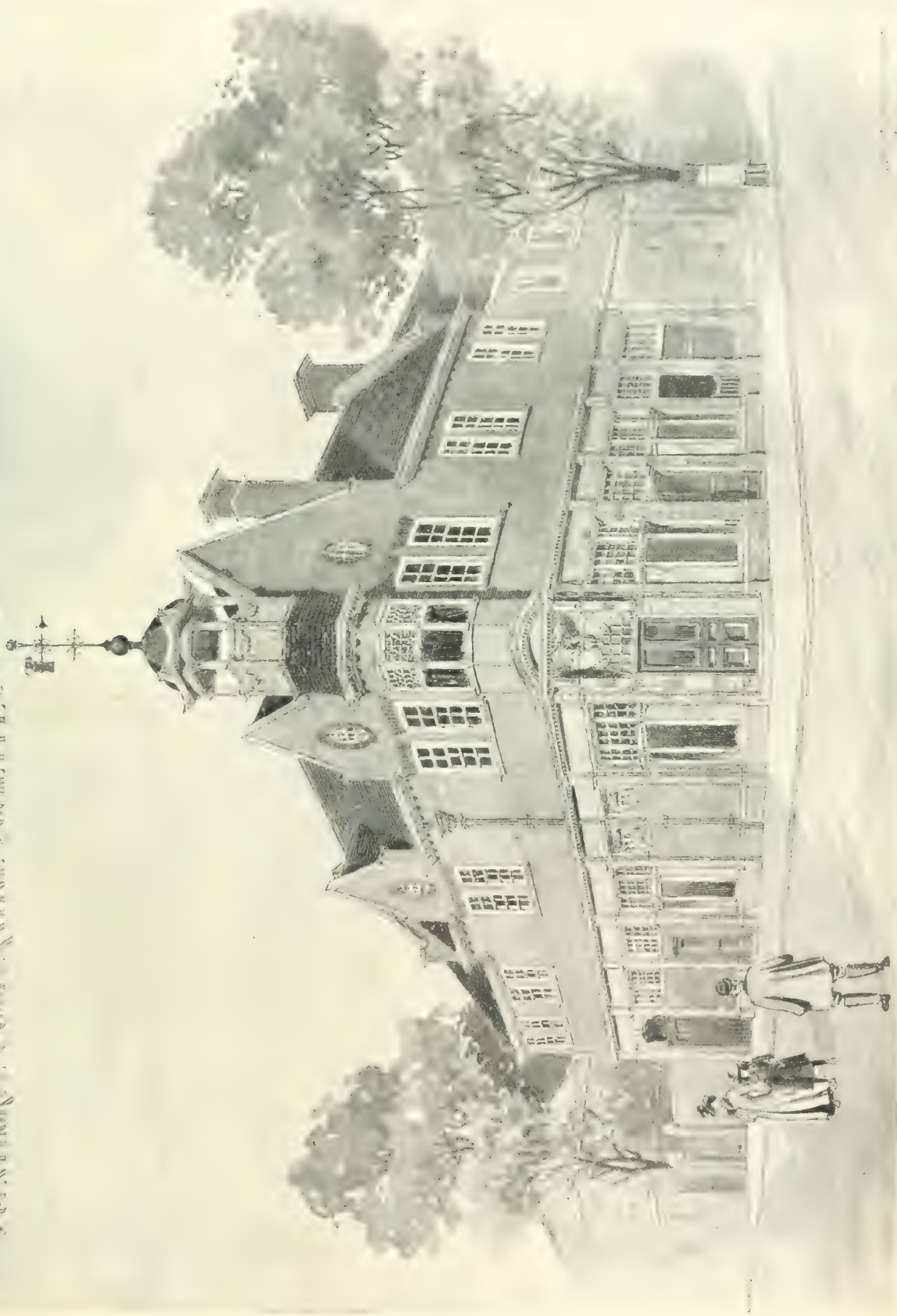


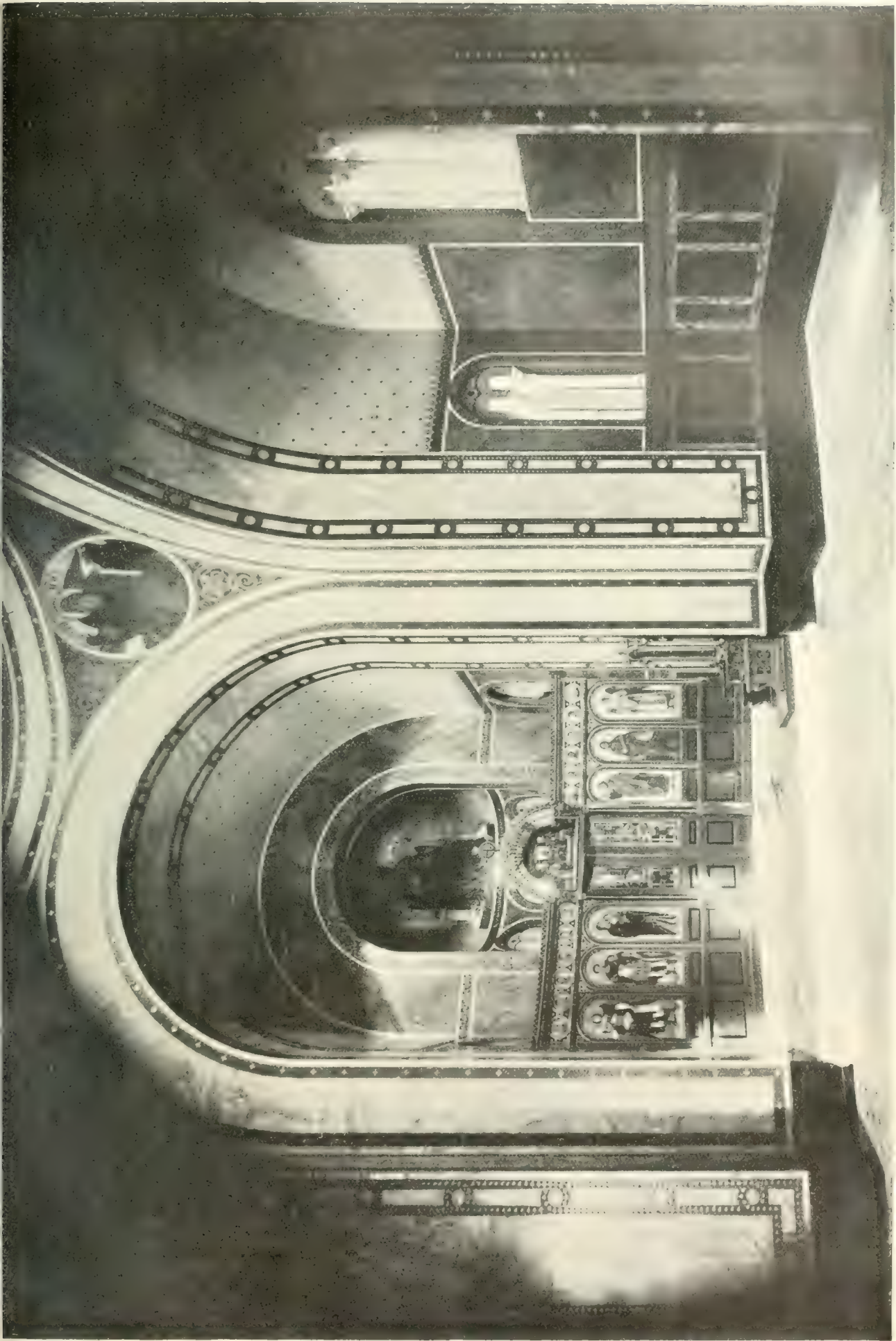
NEW BOROUGH MARKET HALL, LEEDS (INTERIOR VIEW).

LEEMING AND LEECH, ARCHITECTS.



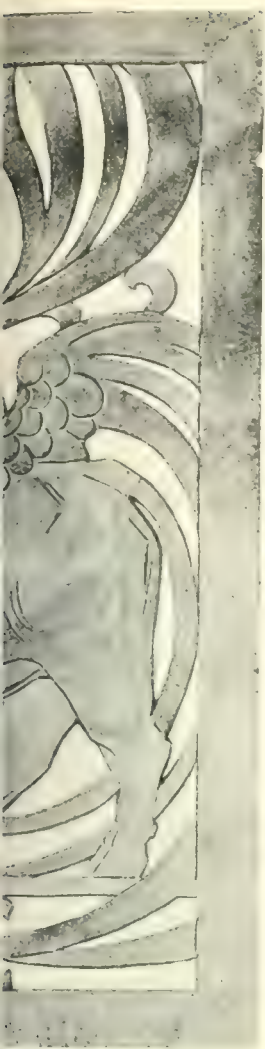
PROPOSED NEW CHURCH, NEW YORK, N.Y.

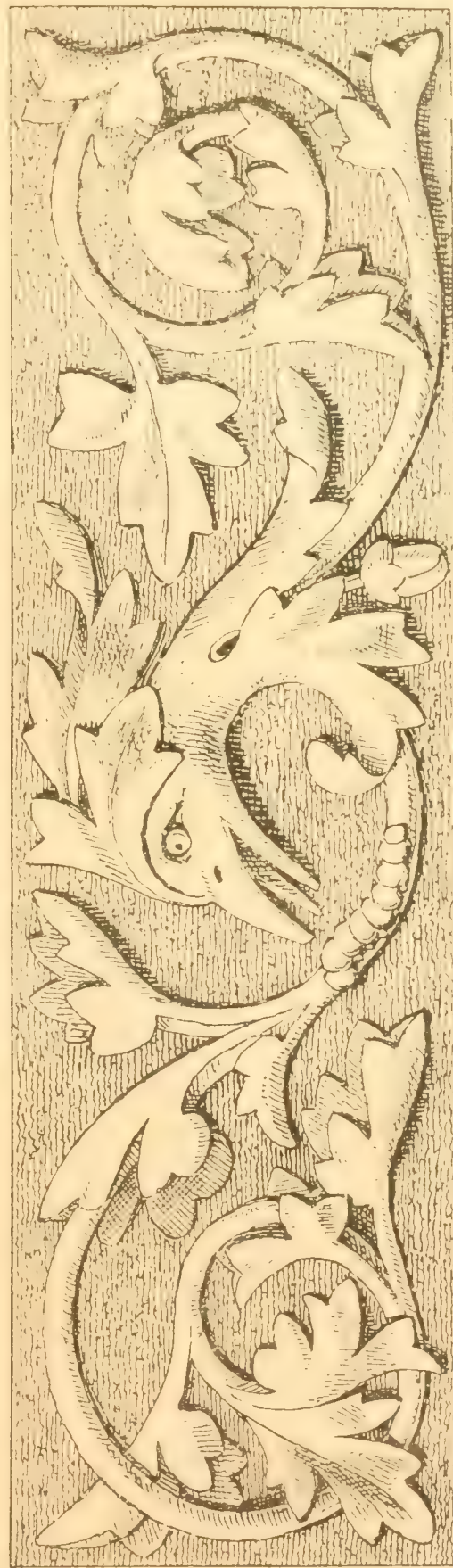




THE NEW GREEK CHURCH, ATHENS
PROFESSOR ERNST ZILLER, ARCHITECT.

The New Greek Church, Athens, 1878.





WATER SUPPLY AND SANITARY MATTERS.

BURNHAM, SOMERSET. — At Webbington, on Monday, Mr. G. B. Sully, chairman of the Burnham Urban District Council, officially turned the water into the new mains, which have just been laid between Webbington and the pumping-station, Brent Knoll. Mr. W. J. Press, of Burnham, is the engineer, and the present scheme is to prevent the waste for the future of 70,000 gallons of water daily by providing an additional 8in. main. Eventually Mr. Press's scheme provides for bringing the whole of the supply of water at Winscombe to Burnham by laying a new 12in. main to Webbington, when both the original 6in. main and the new 8in. main will be fully utilised. Mr. W. H. Smith, of Clifton, was the contractor for the present scheme, which has cost £4,500. The mains cross the river Axe upon steel girders.

SUTTON-IN-ASHFIELD, NOTTS. A scheme of sewerage and sewage disposal, prepared by Messrs. Balesley, Son, and Nichols, of Westminster, has been adopted by the urban district council. The estimated cost of the engineering works, including certain additions to the surface water drainage, amounts to the sum of £29,015.

On Wednesday, the 12th inst., the Bishop of Crediton laid the foundation-stone of St. Simon's Parish Hall, Plymouth, which will be temporarily used for services while the new church of St. Simon (to seat 1,000) is being erected. The contractor is Mr. Ambrose Andrews, of Plymouth, and the architect Mr. Harbottle Reed, of Exeter, from whose plans the new church will shortly be commenced.

At a public meeting at Dover on Tuesday, in connection with the local memorial to Queen Victoria and a memorial to the late Sir Richard Dickson, it was decided that both memorials should take the shape of additions to Dover Hospital, that to the Queen to consist of an isolation block and new out-patients' department at a cost of £6,000, and the Dickson memorial to consist of an operating theatre and lift to cost £1,100. £3,000 was promised in the room.

Mr. Bryce, M.P., was present on Wednesday at the opening of a new Board school, which has just been erected by the Hendon School Board, at Child's-hill, and will provide 1,007 places.

At Weston-super-Mare several important works are now in hand. Something like £15,000 is being expended on a pavilion, £10,000 on a new swimming-bath, over £1,000 on widening and improving the Marine-parade, while the new low-water pier is nearing completion, and the laying of electric tramways will be commenced at the close of the summer season.

In the House of Commons, the London County Council Tramways Bill has been read a third time.

Mr. H. K. North has held an inquiry at Beckenham into the urban district council's application for sanction to borrow £21,000 for electric light extension works.

A return of the valuation of counties, burghs, and parishes in Scotland was issued on Monday as a Parliamentary paper. It is dated May 1, and shows the total valuation of the country to be £238,434,319. Eight counties have a valuation of more than a million sterling, the greatest being Lanark, with over eight millions.

The Highways Committee of the London County Council will next week recommend the Council to apply to Parliament in the session of 1902 for power to construct 23 miles of new tramways, which, with street widenings, are estimated to cost £1,325,206.

The Bishop of Crediton laid on Friday the foundation-stone of St. Simon's Parish Hall, Plymouth, the site of which adjoins the Infectious Diseases Hospital. The hall will accommodate 400 persons. The hall, which is being built by Mr. Ambrose Andrews, contractor, Plymouth, in accordance with plans prepared by Mr. Harbottle Reed, architect, Exeter, will be constructed of brick, with tiled roofing.

The town council of Jarrow-on-Tyne have raised the salary of their borough surveyor, Mr. J. Petree, to £300 a year.

Memorial-stones for the new Eastville Park Methodist Free Church, Bristol, were laid on Friday. The building is to be Gothic in style, with turrets on either side of the main front. The size of the interior is 60ft. by 40ft., and accommodation will be provided for 750 persons. In the gallery running round there will be an organ-loft and choir. Pennant stone is being employed in the building, with freestone dressings, and the accommodation will include a preacher's vestry and a choir-vestry. At the rear are a lecture-room and two classrooms. The architect is Mr. H. M. Bennett, of Bristol, and the builder Mr. E. Clark, of Fishponds. The building will cost about £4,000.

1472. **Church Seats.** I should be named S. A. K. I have not administered to. Examples of seats, as the dimensions generally given are not always to be relied on for comfortable use, and, in fact, a seat in a first class is not satisfactory. For width between the seats, 31in. to 38in. may be safely used, the height of back from floor about 2ft. 8in.; breadth of seat about 14in., and height of seat about 18in. to 19in.—G.

11725. **Northants.** Your correspondent, if he wishes to see the best of Northamptonshire, could not do better than make his headquarters at Peterborough. There are several first-class hotels, and if the weather did not permit him cycling into the neighbourhood, he could very well find plenty of objects inside the cathedral to occupy him for several wet days. In addition, four railway companies have branches in all directions, and the places in the immediate list are all within a easy walking distance of a station. The list of places only which have the first buildings. I shall be glad to give any further information if necessary. Peterborough Cathedral and precincts:—Barnack Church, 12 miles; Castor Church, 4 miles; Conington Church and Castle, 9 miles; Crowland Abbey, 9 miles; Ely Cathedral, 9 miles; Glinton Church, 5 miles; Kirby Hall, near Deene, 20 miles; Northborough Church and House, 7 miles; Oundle Church, 13 miles; Paston Church, 2 miles; Polebrooke Church, 13 miles; Ramsey Abbey and Church, 14 miles; Stamford, three churches and Burghley House, 14 miles; Thorney Abbey, 7 miles; Trophie Hall, 1 mile; Whittlesey, two churches, 6 miles; Walsby Castle, 1 mile; Warrington Church, 11 miles; Yaxley Church, 5 miles; Ely Cathedral is 33 miles away. Several of the above could be visited on the same day, as they lie on the same road. Perhaps your correspondent would like to write direct to me. If so, he should address his letter to—PERCY G. CLARKE, 10, W. BELL'S DO, CORNHILL, Peterborough.

The Urban District Council of Ilfracombe having applied to the Local Government Board for sanction to borrow £1,150 for purposes of street improvement, Colonel C. H. Luard, R.E., an inspector, held an inquiry at the town-hall on Friday. Mr. O. M. Prouse (surveyor) explained that the money was required for widening the roadway between the Britannia and Crown Hotels, a narrow thoroughfare leading from the pier and harbour to the town.

The Wesleyan Chapel Committee has sanctioned the erection of thirty new places of worship in various parts of the country, at an estimated expenditure of £72,500. One of these new cases is the Seamen's Home, &c., at Poplar, the outlay on which is £13,600.

The urban district council of Newton Abbot decided on Monday to instruct Mr. Silvanus Trevail, F.R.I.B.A., of Truro and London, to prepare rough sketch-plans and elevations for the public library and technical schools proposed to be built in Bank-street.

It is proposed to put the old parish church of St. John at Hackney into a satisfactory condition, to install the electric light, and to put the bells and belfry in good order, at a total cost of about £1,200.

The new buildings for the Radcliffe Library at Oxford, which have been presented to the University by the Drapers' Company, were formally opened on Monday by Mr. C. N. Dalton, master of the company. The buildings have cost upwards of £21,000, and have been erected from designs by Mr. T. G. Jackson, R.A. They form a projecting wing of the museum, with which its Renaissance architecture is in strong contrast. They consist of two upper rooms about 80ft. in length, fitted up as libraries with all accommodation for readers, as well as a basement for the storage of books. There is room, it is calculated, to serve for the accumulations of a century to come.

A Select Committee of the House of Lords concluded on Tuesday the consideration of the Bill giving powers to a company to construct tramways from Golder's Green to Hendon and Finchley in conjunction with the Charing Cross, Euston, and Hampstead Tubular Railway, so as to connect these outside districts with the heart of London by a continuous and expeditious service. The preamble of the Bill was found to be proved.

On Wednesday week the Rev. Chancellor Espin presided over a Consistory Court at Chester Cathedral. The vicar and the wardens of Christ Church, Crewe, received permission to place a stained-glass window in the east end of the church as a memorial to the late John Ramsbottom, of Alderley Edge, who was at one time one of the superintendents at the Crewe railway works. The cost will be about £600.

Half-timbered buildings on the High Bridge at Lincoln are about to be restored for the corporation of that city, at an estimated cost of from £1,000 to £1,200, from plans by Messrs. Watkins and Sons, architects, of that city.

TO CORRESPONDENTS.

[illegible]

One Pound per annum post free to any part of the United Kingdom, for Canada, Nova Scotia, and the United States, £1.5s. 6d. each; the 2111, 1. Franco-Germany, £1.6s. 8d. each; 18. To India, £1.9s. 6d.

To any of the Australian Colonies or New Zealand, to the Cape, the West Indies, or North, £1.6s. 8d.

The place for employment and contract advertisements, public companies, and all official advertisements is the place of the world, the first and counting as the national and foreign as the public.

The charge for Auctions, Land Sales, and Miscellaneous and Trade Advertisements (except Situation advertisements) is 1d. per line of 40 words. The first line counting as two), the minimum charge being 4s. 6d. for 40 words. Special terms for series of more than six insertions can be ascertained on application to the Publisher.

Front-page advertisements 28¢ per line, and Paragraph Advertisements 18¢ per line. No front-page Paragraph Advertisements inserted for less than one

Advertisements for the current week must reach the office not later than 3 p.m. on Thursday. Front-page Advertisements and alterations in serial advertisements must reach the office by Tuesday morning to secure insertion.

The charge for advertisements for "Situations Vacant" and "Situations Wanted" is One Shilling per Line a Week, and Sixpence for every eight words after the first line. Advertisements must be paid for in advance.

London: W. D. and Sons, Ltd. M. R. C. B. and P.
 Ralph - E. B. E. S. M. and Co. A. P.

A. L. HOLDER.—If you will refer to the Instructions, you will see that the eastern frontage of 44 ft. is in the side street, and the south elevation, 23 ft. wide, will face the market-place.)—J. S. STEVENSON. The idea of slate-hanging is emphasised by the illustrated article published in the *BIRMINGHAM NEWS* for May 11 last. (See page 1.) Your pattern may be made of the material in which you wish to hang the slanks up the outermost steps on the south facade, provided no protective porch is introduced.)

QUESTIONS.

1174 **Dilapidations** Holding a property under lease for several years past, my term is now expiring, and the owner is about to pull it down. He states that he means painting, according to his views of the matter, but instead of painting, he requests me to give him, as the cost of painting, because he wants to pull it down, to the painting of his home. Will you kindly inform me, whether I am under the circumstances, bound to pay him the money? A. O. S. 1884.

1911. **Modern Vaulted Churches.** By Charles A. F. B. his masterful and final work. St. Peter's, Asheville, with vaulted brick nave and apse. St. John's, 1911, Greensboro, St. John's Episcopal, New York. These are the three I have seen. M. B. Jones, but at the same time the three correspond in type, the names, St. Peter's, Kilmichael and St. John's. Harrington, 1911, Mr. J. Brooks, the oldest and best, the latter has the name. G. H. G.

11724] **Land Surveying.** "Witopichan" will do well to obtain Middleton and Chetw. A's work, "A

Two committees of the Leeds Corporation held a joint meeting, on Tuesday, to consider the question of the erection of a library and baths in York-road, to meet the requirements of the north-east and east wards. It was decided to invite competitive plans for the erection of the buildings, the approximate cost of which will be about £15,000. The library will comprise a lending department, a general reading-room, and reading-rooms for ladies and juveniles. The baths will include a large swimming-bath, with accommodation for children, and shower and Russian baths.

LIST OF TENDERS OPEN.

Police Station, Hospital	£11, £10	W. J. Mann, Clerk, Union-street, Trowbridge	June 24
Police Station, Municipal Institute	£10, merged, £75, £50	John Parker, City Engineer, Hereford	" 30
Police Station, Western Club, Reading	£15 15s. (2nd), £10 10s. (3rd)	The Town Clerks, Hamilton, N.B.	" 30
Police Station, Municipal Institute, Chambers, & Co., Market St., Reading	£10		
Police Station, Town and Police Station, &c. £7,000 (merged)	£10, £200, £100	H. Pierce, Clerk, U.D.C. Office, Llanwrst	July 26
Police Station, Municipal Hall	£10 15s.	The Town Clerk, Town Hall, Manchester	" 31
Police Station, Municipal Institute, 10 Western Promenade, Colchester	£21 merged, £10 10s.	James Lowery, 59, Mann-street, Egremont	Aug. 1
Police Station, S.W. Police Station, King's-road	100s. merged, 500s. 50p.	T. H. Cornish, Town Clerk, Public Buildings, Penzance	Sept. 1
Police Station, Municipal Club Premises		The Public Baths Committee Office, 171, King's-rd., Chelsea, S.W.	Oct. 1
		John Blakesley, Burbage-road, Hineley	—

LIST OF TENDERS OPEN.

W. J. T. Williams, Alterations to Land	Hillhead and Sons	S. J. Wilde and Fry, Architects, Boulevard Chambers, Weston-super-Mare	22
W. J. T. Williams, Alterations to Land	W. J. Wilbury, Post-Office, Canon-town	22
W. J. T. Williams, Alterations to Land	J. Somerville and Son, Blainbowrie	22
W. J. T. Williams, Alterations to Land	Town Council	T. B. Laing, Town Clerk, Leith, N.B.	22
W. J. T. Williams, Alterations to Land	R. Roadley, West End Farm, Flimby, Cumberland	22
W. J. T. Williams, Alterations to Land	S. Kelway Pope, M.S.A., Archt., 27, Portland-street, Southampton	22
W. J. T. Williams, Alterations to Land	J. L. Donnelly, Architect, Omagh	22
W. J. T. Williams, Alterations to Land	George Gow, Tregothnan Office, Truro	22
W. J. T. Williams, Alterations to Land	Wm. Davidson, Architect, Ellon, N.B.	22
W. J. T. Williams, Alterations to Land	J. Russell, St. Crosby-street, Maryport	22
W. J. T. Williams, Alterations to Land	P. Vivian Jones, P.A.S.I., Architect, Hengoed	22
W. J. T. Williams, Alterations to Land	Owen Pritchard, 15, Cross-street, Oswestry	22
W. J. T. Williams, Alterations to Land	Frank T. Smith, Architect, Port Talbot	22
W. J. T. Williams, Alterations to Land	J. B. Minn, 25, Town-street, Stanningley	22
W. J. T. Williams, Alterations to Land	C. H. Fowler, F.S.A., Architect, The College, Durham	22
W. J. T. Williams, Alterations to Land	D. Williams, County Surveyor, Mold	22
W. J. T. Williams, Alterations to Land	John Rust, Architect, Aberdeen	22
W. J. T. Williams, Alterations to Land	George Gow, Tregothnan Office, Truro	22
W. J. T. Williams, Alterations to Land	P. Vivian Jones, Architect, Hengoed	22
W. J. T. Williams, Alterations to Land	Arthur W. Yeomans, M.S.A., Architect, Chard, Somerset	22
W. J. T. Williams, Alterations to Land	E. L. Curtis, 120, London-wall, Moorgate-street, E.C.	22
W. J. T. Williams, Alterations to Land	James Deas, A.M.I.C.E., Municipal Offices, Warrington	22
W. J. T. Williams, Alterations to Land	Arthur W. Yeomans, M.S.A., Architect, Chard, Somerset	22
W. J. T. Williams, Alterations to Land	The Rev. S. Gregory, Landulph Rectory, Hatt, R.S.O.	22
W. J. T. Williams, Alterations to Land	Ernest G. Davies, M.S.A., 6, St. John-street, Hereford	22
W. J. T. Williams, Alterations to Land	J. F. Curwen, F.R.I.B.A., Architect, Highgate, Kendal	22
W. J. T. Williams, Alterations to Land	Arthur W. Yeomans, M.S.A., Architect, Chard, Somerset	22
W. J. T. Williams, Alterations to Land	J. S. Molat, Architect, Whitehaven	22
W. J. T. Williams, Alterations to Land	George White, Architect, Estate Office, Mexborough	22
W. J. T. Williams, Alterations to Land	Edgar J. Evans, A.M.I.C.E., Engineer, Penarth	22
W. J. T. Williams, Alterations to Land	J. Wightman Douglas, 40, Bondgate, Alnwick	22
W. J. T. Williams, Alterations to Land	Arthur W. Yeomans, M.S.A., Architect, Chard, Somerset	22
W. J. T. Williams, Alterations to Land	W. E. Putnam, A.M.I.C.E., Borough Engineer, Town Hall, Morley	22
W. J. T. Williams, Alterations to Land	E. Rotter, A.M.I.C.E., Tramways Engineer, Town Hall, Portsmouth	22
W. J. T. Williams, Alterations to Land	Rowland Plumbe, F.R.I.B.A., Architect, 13, Fitzroy-square, W.	22
W. J. T. Williams, Alterations to Land	J. G. T. West, M.S.A., Architect, The Knowl, Abingdon	22
W. J. T. Williams, Alterations to Land	James Lord, C.E., Borough Engineer, Town Hall, Halifax	22
W. J. T. Williams, Alterations to Land	T. Sampson and Son, Surveyors, 16, Ship-street, Brighton	22
W. J. T. Williams, Alterations to Land	J. W. Cockrill, A.R.I.B.A., Boro' Eng., Town Hall, Great Yarmouth	22
W. J. T. Williams, Alterations to Land	Settle and Farmer, Architects, Millom	22
W. J. T. Williams, Alterations to Land	Fairbank and Wall, Architects, Bank-street, Bradford	22
W. J. T. Williams, Alterations to Land	W. H. D. Horsfall, Architect, Tower Chambers, Halifax	22
W. J. T. Williams, Alterations to Land	Groves, Cooper, and Stapledon, Surveyors, Bideford	22
W. J. T. Williams, Alterations to Land	G. E. T. Laurence, A.R.I.B.A., 22, Buckingham-st., Adelphi, W.C.	22
W. J. T. Williams, Alterations to Land	The Estates Office, Fochabers, Scotland	22
W. J. T. Williams, Alterations to Land	J. Ward, Borough Surveyor, Babington-lane, Derby	22
W. J. T. Williams, Alterations to Land	The Estates Office, Fochabers, Scotland	22
W. J. T. Williams, Alterations to Land	T. H. Yabbicom, M.I.C.E., City Engineer, 63, Queen-square, Bristol	22
W. J. T. Williams, Alterations to Land	The Estates Office, Fochabers, Scotland	22
W. J. T. Williams, Alterations to Land	The Borough Surveyor, Town Hall, Preston	22
W. J. T. Williams, Alterations to Land	The Estates Office, Fochabers, Scotland	22
W. J. T. Williams, Alterations to Land	John Ward, Borough Surveyor, Babington-lane, Derby	22
W. J. T. Williams, Alterations to Land	The Estates Office, Fochabers, Scotland	22
W. J. T. Williams, Alterations to Land	Alfred Beaumont, C.E., County Surveyor, Beverley	22
W. J. T. Williams, Alterations to Land	F. J. C. May, M.I.C.E., F.S.I., Boro' Eng., Town Hall, Brighton	22
W. J. T. Williams, Alterations to Land	T. Mansel Franken, Clerk, Cardiff	22
W. J. T. Williams, Alterations to Land	S. Wilkinson, Architect, Sowerby Bridge	22
W. J. T. Williams, Alterations to Land	Howard Hurd, C.E., Surveyor, Council Offices, Broadstairs	22
W. J. T. Williams, Alterations to Land	Joseph H. Lee, Secretary to Trustees, Crowle, via Doncaster	22
W. J. T. Williams, Alterations to Land	Donald Cameron, City Engineer, Exeter	22
W. J. T. Williams, Alterations to Land	J. Bendelow, 16, Nesham-place, Houghton-le-Spring, Co. Durham	22
W. J. T. Williams, Alterations to Land	John M'intyre, Architect, Letterkenny	22
W. J. T. Williams, Alterations to Land	R. B. Pratt, A.R.I.B.A., Town and County Bank Buildings, Elgin	22
W. J. T. Williams, Alterations to Land	Botterill, Son, and Bilson, Architects, 23, Parliament-street, Hull	22
W. J. T. Williams, Alterations to Land	A. O. Schenk, M.I.C.E., Harbour Offices, Swansea	22
W. J. T. Williams, Alterations to Land	Moore and Crabtree, Architects, York Chambers, Keighley	22
W. J. T. Williams, Alterations to Land	Arthur W. Yeomans, M.S.A., Architect, Chard, Somerset	22
W. J. T. Williams, Alterations to Land	Medley Hall, Architect, Halifax	22
W. J. T. Williams, Alterations to Land	Frank Allen, Clerk, Bank Chambers, Doncaster	22
W. J. T. Williams, Alterations to Land	Dd. Davies, 3, Brookland-terrace, Llanbilleth, Wales	22
W. J. T. Williams, Alterations to Land	A. O. Schenk, M.I.C.E., Harbour Offices, Swansea	22
W. J. T. Williams, Alterations to Land	G. Jones & Son, M.S.A., Architects, 17, George-street, Aberystwith	22
W. J. T. Williams, Alterations to Land	J. Sharp, Surveyor, 5, Sunnyside, Borough Green, Wrotham	22
W. J. T.			

Gweysyllt—Additions to Congregational Chapel	Building Committee	J. Gurney, W. A. R. E. B. A., Fenton-street, Wigan
Widchester—Prebends' Hall, Abbey-street		Chas. J. Leitch, 3, Ashdale-st., Queen-street, Chester
Abertillery—Men's Rebuilding Bazaar (Great P.M. Chapel)		A. J. Jones, 14, Broad-street, Abertillery, Mon.
Wadley—Eight Houses		W. G. Griffiths, 2, Fenton-street, Wigan
Bradford—Ware-house, &c., Wellington Mills	British Han. Assurance Co., Ltd.	Lowth & Keble, 2, 1, Harper Robert, Architects, Colchester, Essex
Langollen—Works and Chimney, Telft		W. R. Watson, Hayes, 1, 1, Park-street, Walsley, Leic.
Timworth—Farm Villages	Co-partnership	Harvey & Co., 1, 1, 2, 2, Church-street, Wigan
Redhill—Roman Catholic Presbytery and Schools		W. G. Griffiths, 2, Fenton-street, Wigan
Cardiff—Additions to Cardiff Conservative Club		W. G. Griffiths, 2, Fenton-street, Wigan
Gowrich, Lanes—Farm Buildings	W. H. Loxe	Edwin Brown, Architect, 12, Fenton-street, St. and W.
Morescote—St. John Baptist Chapel		Edwin Brown, Architect, 12, Fenton-street, St. and W.
Colchester—Rectory, &c., Brook-street		Edwin Brown, Architect, 12, Fenton-street, St. and W.
York—New Theatre, Clifford-street		Edwin Brown, Architect, 12, Fenton-street, St. and W.
Sheffield—Rebuilding Shop, St. Philip's-road		Edwin Brown, Architect, 12, Fenton-street, St. and W.
Cardiff—Packing and Carriage Sheds		Edwin Brown, Architect, 12, Fenton-street, St. and W.
Holbeck, Leeds—House and Shop, Shatton-lane		Edwin Brown, Architect, 12, Fenton-street, St. and W.
Langbilly—Farm Buildings, &c.		Edwin Brown, Architect, 12, Fenton-street, St. and W.
Brightlingsea—Retort House at Gasworks		Edwin Brown, Architect, 12, Fenton-street, St. and W.
Hull—Business Premises		Edwin Brown, Architect, 12, Fenton-street, St. and W.
Baby's—Works, Houses, and Chimney Shaft		Edwin Brown, Architect, 12, Fenton-street, St. and W.
Keighley—Stores, Bradford-road		Edwin Brown, Architect, 12, Fenton-street, St. and W.
Cardenden—Twenty-eight Cottages		Edwin Brown, Architect, 12, Fenton-street, St. and W.

Epsom—Motors, &c.	Urban District Council	W. C. Hayward, 9, Grosvenor-street, Piccadilly, London, W.C.	18
Clockhead—Electrical Plant	Urban District Council	Gordon & P.P., No. 17, Shaftsbury-avenue, W.	19
Lough—Electricity Motors. One Year	Prinnyes Corporation	Tob. Ford, Electric Light Works, Lord-Lanes	20
Bath, Kent—Electrical Plant	Urban District Council	W. C. Hayward, 9, Grosvenor-street, Piccadilly, London, W.C.	21
West Ham—Three Tramway Generators	Town Council ..	James K. Bock, Boro' Electrical Engineer, Abbey Mills, West Ham.	22
Bury—Wiring Infectious Diseases Hospital	Health Committee	Pole and Little, Architects, 9, Gray's Inn-square, W.C.	23
Brighton—Wiring for Electric Lighting Floral Hall	Town Council ..	Theodore C. May, M.D.E.E., 1, White Hall, Brighton	24
Exeter—Equipment of Electricity Generating Station ...	City Council	D. Mann, City Electric Engineer, Exeter	25
Frankston—Wiring and Fitting Electric Light to Offices	Urban District Council	S. J. Newman, F.R.I.B.A., Surveyor, Bank-mo, London	26
Barnonsey, S.E. Motors	Borough Council	Kincaid, Waller, and Manville, Engineers, 29, Gt. George-st., S.W. July	27
Nelson, Lancs. Plant	Corporation	W. Alan Fraser, Borough Electrical Engineer, Town Hall, Nelson.	28
Bromley-by-Bow, E.—Mains Extensions	Electricity Committee	The Borough Electric Engineer, Office, 1st St. Broad-church-lane	29
Rio de Janeiro—Electrical Machinery	Brazilian Government	The Commercial Department of the Foreign Office, Whitehall, S.W.	30
Mansfield—Electrical Plant	Corporation	Robert Hammond, M.I.C.E., 64, Victoria-street, S.W.	31
Birkenhead—Fifteen Electric Tramcar Bodies and Equipments	Corporation	A. R. Fearnley, Tramways Manager, Brandon-street, Birkenhead	32

Burke - Mains, &c.	Urban District Council	J. C. Mellis, M.I.C.E., 264, Gresham House, Old Broad-street, E.C. June 22
Burnley - Laying Water Mains 2,000 yards	Rural District Council	S. Edmonson, Surveyor, 18, Nicholas-street, Burnley
Quainton - Waterworks	Aylesbury Rural District Council	Guest Luckett, Engineer, 2, Church-street, Aylesbury
Dundee - Railway Footbridge	Harbour Trustees	J. Thompson, jun., Harbour Engineer, Harbour Chambers, Dundee
Toberry - Bridge over River Inagh	Urban District Council	The County Surveyor's Office, Court House, Sligo
Witham, Essex - Sinking Boring	Urban District Council	W. Binden Blood, Clerk, Witham
Cockfield - Waterworks	Parochial Committee	Jonathan Linsley, Water Inspector, Mayfield-trace, Cockfield
Fin hl-y - Two Steam Road-Rollers	Urban District Council	F. Smyth, Engineer, Finchley
Alington, Lancs - Gas Exhauster	Urban District Council	T. Newbigging and Son, Engineers, 5, Norfolk-street, Manchester.
Copenhagen - Steam Ferry	Urban District Council	Statsbanernes Sifartsafdeling, Reventlowsgad, 16, Copenhagen B.
Hayward - Heath - Trill Boings	Gas Commissioners	B. Latham, M.I.C.E., Parliament Mansions, S.W.
Dundee - Scrubber-Washer	Guardians	William M'Chae, Gas Engineer, Dundee
London - Steam Pitter's Works at Mayday road	Urban District Council	F. West, Surveyor, 28, Gaudie road, Croydon
Bishop's Stortford - Repairs to Engines	Corporation	R. S. Scott, A.M.I.C.E., Surveyor, North-st., Bishop's Stortford
Glasgow - Penstocks, &c.	Dumfries and Galloway Rural District Council	Office of Public Works, 61, Graham-street, Glasgow
Ballaunacree - Water Supply	Corporation	John R. Dower, Clerk, Dumfries, D. and G.
Rochdale - Widening Spotland Bridge	Town Council	S. S. Platt, Borough Surveyor, Town Hall, Rochdale
West Ham - Eleven Water-Tube Boilers	Corporation	James K. Beck, Boilr Elee. Eng., Abbey Mills, West Ham
Barnsley - Pipelaying, &c.	Corporation	T. and C. Hawksley, Civil Engineers, 30, Great George-street, S.W.
Can - Engines, &c., for Etsa Pumping Station	Health Committee	The Inspector-General of Irrigation, Upper Egypt, Cairo
Brighouse - Widening Line, &c.	Health Committee	The Engineer's Office, Hunt's Bank, Manchester
Glasgow - Pumps, &c.	Health Committee	W. Foulis, Engineer, 45, John-street, Glasgow
Bury - Heating and Hot-Water Supply at Infectious Hospital.	Health Committee	Pole and Little, Architects, 9, Gray's Inn-square, W.C.
Tewkesbury - Floating River, &c.	Health Committee	George Gow, Tregothnan Office, Truro
Bucknall, Staffs - Manholes in High-street	Stoke Rural District Council	Larner Sugden, Surveyor, 20, Cheapside, Hanley
Knuttsford - Steam Mains, &c.	Bucklow Union Guardians	Robert J. M'Beath, M.S.A., Birnam House, Sale
Bulford Camp, Salisbury Plain - Acetylene Gas Lighting	Corporation	John Harding and Son, Architects, High-street, Salisbury
Barnsley - Covered Service Reservoir	Corporation	T. and C. Hawksley, Civil Engineers, 30, Great George-street, S.W.
Darvel, N.B. - Water Supply Works	Commissioners	P. Campbell Hunt, C.E., 32, John Funnell-street, Kilm. street
Port Talbot - Railway 800 yards	English Colliery Co.	Frank E. Smith, Architect, Port Talbot
Brewood - Heating Church with Hot Water	Vicar and Churchwardens	The Rev. C. Dunkley, The Vicarage, Brewood, Staffs.
Tonkaskid, Sound of Islay - Repair to Pier	Urban District Council	John Loughlan, Factor, Ellabru, Bridgend, Eby
Willenhall - Widening Lachmere Brook Bridge	Urban District Council	T. Edgar Fellows, Engineer, Town Hall, Willenhall
Bardon Mill - Widening Bridge	Northumberland County Council	J. A. Bean, County Surveyor, Moot Hall, Newcastle
Nelson, Lancs - Conveyor Belt	Sewage Committee	B. Ball, A.M.I.C.E., Borough Engineer, Nelson
Edinburgh - Laundry Machinery and Fittings, City Hospital	Corporation	The Public Works Office, City Chambers, Edinburgh
Worcester - Piling Portion of Severn (330 yards)	Monaco Government	T. Caik, A.M.I.C.E., City Engineer, Guildhall, Worcester
Monaco - Jetty	Town Council	The Commercial Department, Foreign Office, Whitehall, S.W.
Croydon - Brick Sewer Culverts (1½ mile), Mitcham-road Dist.	Great Western Railway Co.	The Deputy Borough Engineer's Office, Town Hall, Croydon
Westbourne Park, W. - Reconstructing, &c., Green-lane Bridge	Magistrates and Council	G. K. Mills, Secretary, Paddington Station, London
Edinburgh - Extension of Portobello Promenade	Greenwich Union Guardians	T. Hunter, W.S., Town Clerk, City Chambers, Edinburgh
Sidcup, Kent - Engines and Pumps at School Homes	North-Eastern Railway Co.	Thos. Dinwiddie, F.R.I.B.A., Crooms Hill, Greenwich
Newcastle-upon-Tyne - Diversion of Railway Terrace	Urban District Council	C. A. Harrison, Central Station, Newcastle-upon-Tyne
Seaford - Extension of Sewage Outfall	Electric Lighting Committee	B. A. Miller, Surveyor, 3, Clinton-place, Seaford
Hackney, N.E. - Mechanical Coaling Apparatus	North-Eastern Railway Co.	Robert Hammond, M.I.C.E., 64, Victoria-street, S.W.
Newcastle-upon-Tyne - Widening Bridges, Dunn-st. & Gas-house-l.	Greenwich Union Guardians	C. A. Harrison, Central Station, Newcastle-upon-Tyne
Sidcup, Kent - Sinking Well at School Homes	Rural District Council	Thos. Dinwiddie, F.R.I.B.A., Crooms Hill, Greenwich
Chepstow - Repairing Bridge, Tintern Cross	East Sussex County Council	J. W. Stanton, Clerk, Welsh-street, Chepstow
Freshfield - Bridge	Urban District Council	F. J. Wood, A.M.I.C.E., County Surveyor, County Hall, Lewes
Cockermouth - Heating Apparatus, Congregational Church	Urban District Council	James Huddart, Crown-street, Cockermouth
Warrnes - Repairing Fire-Engine, &c.	Corporation	W. S. Barnes, Surveyor, Council Offices, Hanwell, W.
Chester - Sewerage Works	Caledonian Railway Co.	Major H. Tulloch, C.B.E., 28, Victoria-st., Westminster, S.W.
Douglas, Lanarkshire - Inches and Giespin Railway	Aberavenny Rural District Council	J. Blackburn, Secretary, 302, Buchanan-street, Glasgow
Lingwood - Stone Arched or Iron Girder Bridge	Gas Commissioners	John Gill, Surveyor, 4, Brecon-road, Aberavenny
Edinburgh - Railway Tank Wagg ns	Urban District Council	W. R. Herring, Chief Engineer, New-street Works, Edinburgh
Barnes - Refuse Destructor	Rural District Council	G. Bruce Tones, Engineer, High-street, Mortlake, S.W.
Chorley, Lancs - Pumping Station, &c.	Bengal-Nagpur Railway Co., Ltd.	Alban Jolly, Surveyor, 9, High-street, Chorley
London, E.C. - Ten Six-Wheeled Coupled Locomotives	Walsley Urban District Council	Sir John Wolfe Barry, 21, Delahay-street, Westminster, S.W.
Ermvout - Machinery and Tools	United States Government	J. H. Crowther, Great Float, near Birkenhead
Manila - Harbour	Gas Committee	The Commercial Department, Foreign Office, Whitehall, S.W.
Wigan - Stoking Machinery	Urban District Council	Harold Jevons, Town Clerk, Wigan
Carrington - Church Heating Apparatus	Urban District Council	The Rev. C. S. Stubbs, Curate in Charge, Carrington, Manchester
Eccleshall - Reservoir	Land-owners	Lowth Kennedy and J. Harper Bakes, Architects, Leek
Calddict Moor, Mon. - Waterworks	Urban District Council	Tozumah Res., C.E., Corn Exchange Chambers, Newport, Mon.
Warblington - Acetylene Gas Plant, &c.	Urban District Council	F. Swinburn, Surveyor, Warblington

Dundee—Rubble Masonry Party-Wall, Eastern Wharf	Harbour Trustees	J. Thompson, jun., Engineer, Harbour Chambers, Dundee	June 22
Broadstairs—Wrought-Iron Railings (920 yards)	Broadstairs and St. Peter's U.D.C.	H. Hurd, C.E., Town Surveyor, Council Offices, Broadstairs	" 27
Lancaster—Tubular Iron Fencing (530 yards)	Rural District Council	Joseph Eunon, Clerk, 5, Dalton-square, Lancaster	" 38
Aldershot—Fencing Boxall-lane and Eggar's Hill	Urban District Council	Nelson F. Dennis, A.M.I.C.E., Surveyor, Aldershot	July 2
Stockport—Brick Retaining Wall	General Purposes Committee	J. Atkinson, A.M.I.C.E., Boro' Surveyor, St. Petergate, Stockport	" 4
Salford—Fencing, Draining, & Terracing Ground, Waste-lane	Football Club Co., Ltd.	V. Wright, Secretary, 1, Regent Theatre Buildings, Salford	—
Normanton—Fencing Football Ground	—	Arthur Fawcett, C.E., Wakefield	—

Edinburgh—Internal Fittings for Various Schools	School Board ..	J. Wilson, 3, Queen-street, Edinburgh	June 22
Swindon—Tables and Fifty Chairs	Corp. Bn.	H. J. Rump, Borough Surveyor, Town Hall, Swindon ..	" 24
Colchester—Windows, &c., in Workhouse Infirmary ..	Guardians ..	C. E. White, Clerk, 57, North Hill, Colchester	" 28
Branksome—Furniture and Fittings for New Offices ..	Urban District Council	S. J. Newman, F.R.I.B.A., Surveyor, Branksome, Dorset ..	" 24
Winwick—Furniture to County Asylum		H. Ellis, Clerk, The Asylum, Winwick, Lancs	July 4
Liverpool—Small Ward Tables (100), Bed Tables (50) ..	Select Vestry ..	H. J. Hagger, Vestry Clerk, Parish Offices, Brownlow Hill, Liverpool ..	" 24
Nottingham—Screens at Queen's Walk School	School Board ..	A. N. Bromley, Archt., Prudential Bldgs., Queen-st., Nottingham ..	" 24
Reading—Furnishing Three Children's Homes	Guardians ..	C. Kift, Clerk, Guardians' Offices, Thorn-street, Reading ..	" 24

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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BUILDING CONDITIONS VERSUS TRADITION.

ARE we to continue to use types and styles of architecture in spite of new conditions? By asserting our right to do so, of course, we are admitting that architecture has not altered, and cannot change; that, in fact, it is a dead, not a living art. To continue, for instance, to erect over a modern shop of plate-glass with beams of iron, a front of Gothic or Renaissance design, or to apply to a modern lecture-hall or meeting-house the outward garb of a Middle Age or French Renaissance character, is simply to acknowledge that architectural design has exhausted itself, and our inability to express artistically the structural forms and requirements of the age. These are questions that are as pointed now as they were early in the last century. Our modern buildings show an improvement in the use and details of the styles we select. Our Gothic churches are more thoroughly Gothic in principle and character than they were when St. Luke's, Chelsea, was built. We have improved greatly in our details; our buildings generally show that we have abandoned a ridiculous purism for forms of a more flexible kind; yet in the main we have simply changed our models and adopted a higher standard not abandoned precedent and tradition. Again we repeat, Why do we adhere to traditional forms of design when our conditions have completely altered? or should we try to disguise or disregard the latter, so as to bring them into harmony with the outward form? It is the last course we have been trying to follow as the only alternative. We cannot alter our conditions, but we may disguise or conceal them. It would be manifestly impossible, for instance, to change the circumstances of our commercial life; to return to the old low-ceiled shops of a century or two ago, to come back to small-paned or mullioned windows and "pents," for the sake of harmonising with a particular style. Nor could we repudiate plate-glass, iron and steel girders and columns, and return to small panes or timber beams; but we may minimise them, or try to disguise their forms. These things commercial men will have, whether we like them or not. They must form part of the design, and the most direct and honest way is to do so openly—to exhibit them, and to bring them into accord with the rest of the design. If a large plate-glass window is absolutely necessary, and the upper part of the façade has to be carried by girders and columns or stanchions, these structural arrangements cannot be hidden or partially concealed; but ought to be made to harmonise as far as possible with the remainder of the façade. Then the demands for larger windows, with small piers, must be met; for warehouses in the City, where light is scarce, it would be absurd to adopt a façade intended for an Italian palace or a French chateau. In these cases the profession have been attempting to mask the requirements so as to bring them into unison with the style selected. They have tried all kinds of devices, but without success, to supersede large sheets of plate-glass, by adopting frequent piers and arcades, by multiplying window openings instead of having large areas for light—all with the object of being able to present a front in Italian or French or Flemish Renaissance. Considering for a moment the first part of the question we

have put, Why we still use traditional forms, it is obvious that the answer is: It is easier to employ them than it would be to invent other forms that would agree with our conditions, and to endeavour to mitigate the latter, or, if possible, to ignore them. In other words, by falsifying our structural requirements we are able to utilise the architectural types and forms of the past, and this has been the way we have been pursuing. Whereas the logical and honest method would be to accept and boldly recognise the irrevocable factors, and to make our architecture agree with them. Had we followed this procedure, we might have had a style of our own, based on preceding styles, but still a distinct national development for our commercial and business architecture. The President of the Institute, in his inaugural address, lamented the practice of erecting large façades of stone or terracotta and brick over a yawning abyss of plate-glass; he, in fact, as it has been pointed out, resents the necessities which compel architects to raise buildings over large shop-windows of plate-glass; he complains of the difficulties that the architect has to meet in the adaptation of traditional styles to everyday conditions, as if traditional styles were imperative, and conditions were not so, but modern obstacles placed in the way of the architect. In short, the argument seems to reverse the position of things; in other words, building requirements must be brought to the touchstone of the traditional style which should determine the arrangement. We may compare the procedure to that of a tailor who desires to find a waistcoat or a figure that will fit a certain garment, rather than make a garment to fit the figure. If the architect cannot find conditions that will suit his ideal design, he must alter or disguise them. This is the principle that seems to be in vogue. But the same conditions do not hold in all buildings. In the monumental class of buildings—as, for example, churches, tombs, mausolea, municipal buildings, parliament houses, senate houses, national galleries, and museums, we have not those trying conditions that come into force in commercial buildings. Large areas of space and light iron construction, and the exigencies of trade do not prevail, and the architect is less influenced by them. So that the conditions of buildings vary with their requirements for different purposes. Under conditions of modern life and business the architect is called to face circumstances and regulations quite different, often antagonistic to those of the Middle Ages. Take, for instance, the modern hotel, with its many and complex appointments for visitors indulging a gay city life, where there must be a maximum of comfort for the individual as well as for social and brilliant gatherings, rapid transit and ease of intercommunication, where many stories are a desideratum; or the large commercial house of business or modern "civil service store," where the building must be constructed to give the largest area of space on each floor with a minimum of support or solids; where there must be rapid means of transit, and ample light and air; or the technical school or institute, with its many requirements. How can we honestly express these conditions of modern life by adopting a style that was evolved from totally different requirements, like those of a monastery, or those of a Mediaeval palace in Rome, Florence, or Venice? Can the exterior of a Flemish town-hall be appropriately applied to the façade of a London hotel or shop? These questions must be answered before we can satisfy the position we occupy. Or, again, in church and hall building the old conditions have not so altered. Public ceremonial worship, as we now understand it, is fitly represented by the Middle Age type of church, which in numerous instances still does duty. All the associations of church life and ritual are clustered round the altar and the sacraments; but the conditions

have since altered when we attempt to make the pulpit or the auditorium the central feature. In this case the style is not a nave and aisled church becomes wrong; we then want a spacious hall-like structure with an external front adapted to the plan. We believe, in fact, that the modern school of church architects are consistent and logical in their application of traditional forms to church building, and it is only when the conditions demand that the original intention that this application become absurd; and so designs for a public hall, for meetings, or musical performances are based on conditions that remain practically the same for all time. The extent to which they have changed has reference mainly to matters like acoustics, warming and ventilation, and provision of construction, numerous entrances and exits, and in this respect the conditions have somewhat altered. We do not know whether for a town-hall, an oblong peristyle like that of Birmingham or St. George's Hall, Liverpool, is not quite as well suited, providing the stone can be obtained, as any other; but for work in brick or terracotta this style is questionable. Between these two extremes the conditions of buildings vary. In every case the architect must consult the conditions, and try to find an expression for them independent of any traditional form. The stultification of conditions by architects who employ old styles for buildings of modern use is often observable in modern house-building. Our illustrations from time to time give examples of this disguising or misrepresentation of modern requirements. The employment of half-timber styles in some of our West-end streets is an instance; the small-mullioned window, the overhanging story, the low entrance and hall with its beam-interlaced ceiling, picturesque and well designed as they may be, are others. By using an antiquated style in such situations we disguise or stultify the conditions under which we work. Certain aspects of the question may be distinguished. One architect, A, in designing a modern business house complies with all the conditions and requirements of the trade. He introduces large plate-glass windows, girders and columns, and the like; but he clothes his skeleton structure in a style quite discordant with it. His façade is a reproduction of some Italian palace. It is a flagrant instance of bad taste, but an attempt to comply with modern utilitarianism, without neglecting art. Of course, the architecture is a mere "veneer," and the result is a good example of so-called "syndicated" commercial architecture of to-day as we see it in any great London thoroughfare like Oxford-street. Another architect, B, does not so completely comply with the conditions; he tries to fence with them, to put another meaning on them, to disguise or misrepresent them, or to ignore them altogether; his building is honest or truthful, according to the skill which he employs to disguise the absolute requirements. Instead of using iron columns openly, he clothes them with plaster and terracotta, or marble; his girders are encased to represent stone columns; he employs an arcade that instead of an unbroken one of plate-glass, and by these counterfeits he brings his façade into harmony. The building is, at least, satisfying to one's taste; no part quarrels with another; and this is the system of treatment adopted by the better class of architects who wish not to offend against good taste. A more pronounced way is that pursued by C, who boldly and unsophistically ignores modern requirements. He will have nothing to do with plate-glass, columns, or girders; he builds his front with solid piers; the windows are just enough for light; the entrance is low, and reminds one of the feature seen in old cities in Normandy or Belgium; heavy beams and solid supports are seen inside in fact the architect has

AMONGST the many kinds of bridges now employed girder bridges, cantilever

It will be noticed that in the new East River structure the stiffening trusses are above the bridge floor; but in many suspension bridges the girders come below the platform, and are braced together; of course, in comparatively narrow bridges they are better below so as to afford clear room for the tracks and footways. Whether the suspension form of construction is so satisfactory as the suspended rib proposed by Mr. Claxton Fidler is a question of some importance. In its inverted form it forms an economical three-hinged arch, as the neutral axis is parabolic in curvature, each half of the arch being a parabolic girder. One merit of the three-hinged arch is that it is not affected by

variations of temperature, as the hinge joints allow the crown to rise and fall freely. The suspended rib has the advantage of being rigid, and therefore requires no stiffening girder, as in the suspended chain. It will be readily apprehended that the suspension bridge is an inverted arched rib, the tension on the cables corresponding to the compression on the arched rib; and, consequently if the rib is to sustain the load without bending, the equilibrated polygon for any given load is the right form, as may be graphically shown.

These three types of construction, the arched rib, the suspended rib, and the suspension cable, appear to divide the attention of bridge engineers. There can be little question as to the economical advantages of the arch bridge compared with either the trussed girder or the "bowstring" girder. In the latter, the curved rib has to resist the compressive forces, and the horizontal member the tensile stress; and if the rib springs from abutments or piers, these must be made heavy and massive, to resist the pressure. Locality and local conditions must, however, determine which kind of structure is the best suited for its purpose; but there are two other considerations which the engineer is apt to overlook—namely, the architectural character of the bridge, and its connections at each end. If the approach from either end is in connection with a large city the architectural character of a metallic bridge is of much importance, and we may at once say that some form of arched or suspension construction in which piers or towers are prominent, appears to be more suitable than any iron or steel structure of the plain truss kind.

HOW TO ESTIMATE OR THE ANALYSIS
OF BUILDERS' PRICES. XII.

By JOHN T. RICE, F.S.L., Surveyor, War Dept.

MASON, M. J. 2001.

В. П. Печенкин

Particulars.			
	Wentch	140	140
Algermine	119	140	140
Amesbury	119	140	140
Amston	119	140	140
Bath	119	140	140
Beverly	119	140	140
Bridgeton	119	140	140
Chilmark	119	140	140
Chester	119	140	140
Craigfield	119	140	140
Danville	119	140	140
Granite, Aberdeen	119	140	140
Granite, Devonshire	119	140	140
Horton Wood	119	140	140
Kentish Rag	119	140	140
Ketton	119	140	140
Mansfield	119	140	140
Middle, Statham	119	140	140
Panwick	119	140	140
Parkspring	119	140	140
Portland	119	140	140
Purbeck	119	140	140
Race, Abney	119	140	140
Rubble stone, solid	119	140	140
Rubble stone, cracked	119	140	140
Whinstone	119	140	140

The above weights have been given in round numbers, chiefly for the purpose of calculating carriage and cartage.

Pembroke paying - Weight per foot super			
2 in. = 27 lb.	3 in. =	47 25 lb.	67 lb.
2 in. = 33 7/8 lb.	4 in. =	51 lb.	81 lb.
3 in. = 49 5/8 lb.	4 in. =	67 lb.	

Yorkshire paying - Weight per foot super			
2 in. = 26 lb.	3 in. =	43 lb.	64 lb.
2 in. = 32 1/2 lb.	4 in. =	59 lb.	78 lb.
3 in. = 39 lb.	4 in. =	78 lb.	

Marble slabs—Weight per foot super								
1 in.	=	7 17 lb.	1 lb.	=	17 92 lb.	2 in.	=	28 67 lb.
3 in.	=	10 75 lb.	1 lb.	=	21 5 lb.	2 in.	=	35 8 lb.
3 in.	=	14 82 lb.	1 lb.	=	25 5 lb.			

A quarryman will be able to turn out per day from 5 to 8 tons of limestone and other stratified rock, and from 1 to 1 ton of granite.

1 load of rubble stone or stone paving = $1\frac{1}{2}$ tons.
A cord of stone = 128 ft. cub. of built walling, or
128 ft. cube of loose stone.

PRICES - WALLS.		
Rubble walls of local stone in random courses, in lime mortar	per cyl. cube	s. d. 17 9
Ditto in squared courses, in lime mortar	"	20 0
Rough random walling of Kentish flint, in lime mortar	"	16 6
Rough-coursed ditto ditto	"	20 0

Taking down old rubble walls in English style, with rubble laid solidly, and pointed with coal-ash mortar, per yd. sup.	1	0	0
Ditto ditto with Portland cement mortar, ditto, ditto, per yd. sup.	1	0	0
toothings for, and bonding in, new walls, per yd. sup.	1	0	0
Bonding in, with new stone bonding, all materials and labour, in English style, per yd. sup.	1	0	0
Ditto ditto in cement	1	0	0
Rubble, with rubble, and spray, straight	1	0	0
English style, in bonding, straight or internal angles	1	0	0
Rubble, with rubble, in stones	1	0	0
Rubble, with rubble, in walls and smaller pieces	1	0	0
Stone for rubble work, at the quarries Kentish rag for random-dressed facing, per cubic yard	1	0	0
Ditto hammer-dressed ditto	1	0	0
Ditto for foundations ditto	1	0	0

1851.

Portland Stone, in blocks, each 12 in. by 12 in. by 12 in., squared, and bedded and set in mortar	1
Ditto, roughly squared, and bedded and set in mortar	1
Portland Stone, 2 ft. by 2 ft. by 2 ft., and set in mortar	1
Ditto, but including half-sawing to faces, beds, and joints and setting	1
Portland Stone, 2 ft. by 2 ft., for corner abutments and butt	1
Portland Stone, and labour in fronts of public building, ashlar-faced, and set in mortar	1
Thickened weathered stone in wall, clean, and set in mortar	1
Bases for columns, plain worked where seen, chamfered on top, sunk for iron column, and set in mortar	1
Pier caps, worked plain and rubbed, weathered on top, throated all round, and set in mortar	1
Hinge stones, worked fair on exposed faces, squared, back joint and parallel beds, and set in mortar	1
Stop stones, worked fair on exposed faces, and set in mortar	1
Ashlar, 4 in. thick, including beds, joints, and faces, and set	1
For every inch in thickness on bed, and coping, double-weathered, 12 in. wide by 4 in. thick, rubbed on top and two sides, throated both edges, including beds and joints, and set in mortar	1
Chamfer, 18 in. wide by 12 in. deep, weathered, with moulding 18 in. girth, rubbed, and set in mortar	1
Curb, 6 in. by 6 in., rubbed on exposed faces, including beds and joints, double chamfered, and set in lime mortar	1
Square step, 12 in. by 6 in., rubbed on exposed faces, and bedded in mortar	1
Spandrel step, 12 in. by 6 in., plain, and ditto, ditto	1
Add in back joints to steps taken separately	1
Rounded ends to steps	1
Plain ditto	1
Spandrel step, 6 ft. long by 12 in. by 6 in., moulded and returned, rubbed on exposed faces, and pointed and pinned in wall in mortar	1
Window-sill, 4 ft. long by 12 in. by 4 in., sunk, weathered and throated, grooved for iron tongue, rubbed, including seats for jambs and fair ends, and set in mortar	1
Fair ends, if taken separately, to window-sills	1
Seats for jambs, ditto, ditto	1
Arch stone, 4 courses, 14 in. by 12 in. by 9 in., rubbed on exposed faces, and set in mortar	1

1800-1810

[illegible][illegible]

2in. paving, rubbed, jointed, and laid	1 1/2	0	1
2in. hearth, ditto ditto	"	1	5
Add if laid and jointed in cement instead of mortar	"	2	
Taking up stone paving, hearth, or chimney	"	1	
Taking up old paving, squaring, and relaying	"	0	3
New from old paving	"	1	
4in. landings, rubbed, jointed, and laid	"		
Joggle joint in ditto, and run with cement	per ft. run	0	0
Edges coped or sawn to 2in. paving	"	0	1
Sunk rebate on edges, ditto	"	0	1 1/2
Scribing or bevel cutting, ditto	"	0	2 1/2
Circular cutting, including waste, ditto	"	0	0
Channel stones, 12in. by 4in., quarry-faced, with circular sunk channel, and set and jointed in cement	"	2	1
Taking up ditto, and clean and stack	"	0	1 1/2
Step, 12in. by 6in., rubbed top and face, and bedded in cement	"	3	0
Add if brick-rimmed	"	0	2
Round 1 inch to step	1 ft.	1	0
Plain ditto	"	0	5
Notches in hearths for jambs	"	0	3
Returned ends and junctions to channels	"	0	8
Stopped ends to ditto	"	0	4
Templates, 9in. by 9in. by 3in. tooled, and set in cement	"	1	6
Holes, 1in. in diameter and under, drilled or jumped for bolts, &c.	per inch	0	1

Granite in block, including waste, profit, and cartage within four miles of the merchant's depot in London	per ft. cube	4 9
Ditto, including hoisting, setting, and scaffolding	"	5 0
Plain ashlar, fine-axed work, and set complete	"	10 0
Plain shop fronts, polished, and set complete	"	20 0
Plain pilasters, polished on face and two returns, and about 4in. on bed, measured on face	per ft. sup.	10 6
Steps, 12in. by 7in., fair-axed, and set complete	per sq. yd.	10 0
Columns, 6in. diam., polished and fixed	"	15 0
Bases for columns, 18in. by 18in. by 9in., rough-axed	each	14 6
Perforations, sinking in a square or circular, with sides dressed plain, the superficial area only to be measured, for areas not exceeding 1ft. super	per inch in depth	5 8
Fish in position	"	1 1

MISSILE AND AIRCRAFT

Both stone in plain dressings, as in	quoins, &c., set in mortar	per ft. cube	10
Ditto in church dressings, and set in	.....	.....	10
Stone blocking courses, cornices, strings,	bases, copings, &c., exceeding 5 in.	thick, taken down, removed 25 yards,	and stacked
Slate dowel, from 1 in. to 2 in. square,	and from 2 in. to 4 in. long, and run	with cement, including mortise	each
Copper cramps, 8 in. long, light, and	letting in and running with sulphur ..	.....	1 6
Letting in coping cramps with cement ..	.....	.....	1 6
Letting in door-scrapers into step, and	run with lead .....	.....	1 6
Window-sills or door-steps taken up,	and removed to store .....	.....	0 6
Pinning in ends of door or window-sills	in cement .....	.....	1 6
Perforations, sinkings, and mortises,	square or circular, with sides dressed	plain, the superficial area only to be	measured, for areas not exceeding
one foot square	per in. in depth .....	.....	0 6
If done in position .....	.....	.....	0 6

MATHIEU, J. A. 1954.

	s. p. d. a.	s. d.
Fuze, Buckard's safety	per cask of 44 thoms.	0 14
Powder for blasting	per lb.	0 8
Lead for running in mortises	"	0 3

siderable interest in the welfare of the Museum. The council had the satisfaction of stating that a closer connection had been brought about between the Museum and the Royal Institute of British Architects, which had promised an annual donation of 20 guineas to the funds, on condition that the Institute should be adequately represented on the council, and that members of the Institute and of the Architectural Association should be permitted to sketch from the examples in the Museum without payment of a fee during the hours when it was open to the public. The

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finances of the institution were in a satisfactory state, but a heavy and immediate outlay was in contemplation, the Museum council having resolved to renew the roofs of the older portions of the buildings, which had of late been a constant source of expenditure for repairs, and to replace the present glass by patent glazing. Tenders had been obtained for this important and necessary work, which would involve an outlay of something like £700. The council hope that not only the old friends of the Museum, but the profession generally, will make individual efforts to assist in meeting this exceptional expenditure, and subscriptions would be gladly received by the hon. treasurer and hon. secretary. The Westminster School of Art well maintained its high reputation, and gained a constant accession of new students through the recommendation of artists of

repute and others who had become personally familiar with its work. In the evening classes (with the exception of the men's life class) there had been a gradual falling off, attributable

mainly to the increase in the number of art classes opened in London of late years at nominal fees, or even without any payment whatever. In moving the adoption of the report, Mr. Adams

said there was a mistaken idea abroad, even among members of the architectural profession, as to the intrinsic value of the collection of casts in that museum. By far the greater part of them could not be obtained again, having been secured in specially advantageous circumstances when our cathedrals or churches were under repair, and there was special scaffolding available. As to the money value of the casts, there was no doubt that if they were sold by auction they would be

eagerly purchased for a large sum for German or American universities or colleges, the people abroad having a far keener appreciation of art culture and technical knowledge than was the

case in this country. At the present time he must confess that Gothic art was not in fashion, but he thought he saw signs of a change in public opinion, one being that important books on various phases of Gothic art were being published

Mr. William Pain seconded the resolution. The President, in supporting the motion, which was carried, spoke of the desirability of a rearrange-

ment of the casts, and of the addition of a series of representative Renaissance casts to those already possessed of the Gothic period. He would be glad to give 20 guineas towards the object, and he believed the Royal Institute of

object, and he believed the Royal Institute of British Architects would be prepared to help in this work. Mr. J. P. Seddon promised ten guineas for the same purpose. On the motion of the President, seconded by Mr. Pain, the Duke

the President, seconded by Mr. Lamb, the Earl of Norfolk, the Duke of Rutland, the Marquis of Ripon, Earl Fortescue, the Earl of Wemyss and

March, Lord Grimthorpe, Mr. Aston Webb
A.R.A., Mr. John Belcher, A.R.A., Mr. G. F.

Bodley, A. R. A., and Mr. J. P. Seddon were elected as vice-presidents. On the motion of Mr. M. B. Adams, seconded by Mr. Seddon, the following were elected on the council, with the addition *ex officio* of the President, the hon. treasurer, and the hon. secretary: Messrs. J. P. Seddon, Aston Webb, C. Forster Hayward, Sydney W. Lee, and William Pain, and as representative of the London County Council Messrs. L. H. Hayter, W. R. Lethby, and C. Ford and Mrs. Leon; and as representing the Royal Institute of British Architects, Messrs. W. M. Fawcett, F.S.A., and W. Howard Seth-Smith, Mr. E. I. Somers Cocks was re-elected hon. treasurer, and Messrs. W. Pain and P. D. Leake as hon. auditors. The balance sheet for the year, which was adopted, showed total receipts amounting to £1,710 15s. 4d., of which by far the larger portion, £1,580 7s. 2d., was derived from student fees and grants to the school of art, £95 6s. represented subscriptions and donations, and £20 a gift to the enlargement fund. The expenditure account showed as its chief items £850 for salaries, £306 for models, £135 ground rents, and a surplus of income over expenditure of £29 15s. 4d. The current amount at the bank was

HINTS TO YOUNG VALUERS.

Hints to Young Valuers: a Practical Treatise on the Valuation of Property. By ANTHONY RICHARD CRAIG, F.G.S., and JAMES ROBERT VERNAN MUGGERANT, M.A. A second edition, revised and enlarged. London: The Law Agency, P. et. Ltd., Strand.

of which may be followed to arrive at a valuation of the rent: 1. by individual field valuation, 2. by classification of land or valuing the land under the classes of pasture, arable, rich feeding, buildings; 3. by estimate of balance between income and expenditure; 4. by valuation as a whole, or taking an average of these four valuations. The income and expenditure method is a practical way, and is shown by several accounts. These worked out examples, and the reports accompanying, are serviceable to the student and valuer. The valuation of landed estates for sale is an important chapter. The authors make some useful observations on landed estates as investments for capital. At one time "landed estates held the first place and confidence in the stability of income from land was unbounded," but with the downfall of agriculture in this country, matters have changed. "Formerly the rate of interest derivable from investment in land was generally calculated to exceed slightly the income produced from investment in Consols . . . but now other channels of investment compete with land in the money market—railways, corporation stocks, &c." The author gives an example of a valuation of a freehold estate for the purpose of investment. The valuation of the buildings is considered. Many points must be considered, such as the attractiveness of the buildings and surroundings. For investment this element does not count for much, and, therefore, the valuer must bear the distinction in mind of buying only as an investment, and buying property both as an investment and for occupation as well. The schedule of prices for calculating the cost of repairs to ordinary buildings in country districts is useful; but, of course, the actual cost will depend on locality and labour. Thus we have rough stone walling 18in. thick, including foundations, priced at 7s. to 8s. per perch, brick walling reduced to 9in., including arches and footings, 4s. 6d. to 5s. per yard. The cost of floors is roughly given as follows:—lin. boards, 16s.; 5lb. 2½in. steel brads, 7½d.; labour, laying, &c., 4s.; total, 20s. 7½d. per square. Roofs for slates, battens, and nails are put at 50s. per square; tiles ditto, 45s. ditto; windows, 1½in. sashes and frames glazed and hung complete with 4in. architraves, 2s. to 2s. 6d. per foot super.; casements in 4½in. by 3in. solid frames, hung and glazed with tin. architraves, 2s. to 2s. 6d. per foot; doors 1½in. four-panelled, including furniture, 1s. to 1s. 3d. per foot square; 2in. ditto, 1s. 3d. to 1s. 6d. ditto, and so on. Passing chapters on Land Drainage, Gates and Fences, which contain much useful data, we come to chapters on Timber and Plantations, Coppice and Underwood, containing much useful information and examples of valuations of oak coppices and other plantations. The examples given of farm valuations will be found comprehensive, and of use in making valuations for preparation of annual balance-sheet; but for this detailed work the valuer must have practical knowledge of farm management and stock, implements, dairy utensils, feeding stuffs, manures, tillages, &c. The examples will be found applicable to various conditions and kinds of land.

The authors discuss the provisions usually found in leases of land and the legal relations of landlord and tenant very fully, and all provisions of statutes. Dilapidations and fixtures receive ample attention, and the law and statutory provisions are fully given, and the leading cases cited. Building land is another subject, and the examples furnished of valuations of undeveloped land for building purposes will be of interest to all architects and surveyors and others engaged in estate work. The authors point out the many requirements to be considered—such as the connection of the various plots with the existing drainage, the gradients of roads to be constructed, their probable cost, water and gas facilities, distance from railway station, tramways, post-office, church and schools, attractions and drawbacks of locality. Examples of valuing freehold land are given. The chapters on "The Powers of Sanitary Authorities as to Sewers, Streets, and Buildings," on "Brick Clay," and "Stone Quarries" follow as a matter of course, and their author has given us a concise summary of the various Acts. Maltings, breweries, and distilleries are considered at length, and valuations for a freehold brewery in a provincial town, and licensed houses will prove of much interest to the professional valuer.

The valuation of buildings and artificer's work is a part of the volume that will find most interest

among architects, and the examples of the processes necessary for preparing bills of quantities is shown. This is usefully followed by the mode recommended in taking quantities and measuring up works by the Manchester Society of Architects, in which the London practice is italicised after each item. The subjects of building contracts, rating, compensation, and arbitration are fully discussed, and their legal bearings and importance dealt with in a masterly manner. The example given in the chapter on "Rating" of valuations of water and gas companies and electrical companies' undertakings for rating purposes, cannot fail to be of considerable service. We have said enough to give the reader some idea of the comprehensiveness and usefulness of this treatise, which must become the standard manual for valuers.

NOTES FROM EDINBURGH.

ALTHOUGH the prospects of the building trades have not improved within the last six months, and wages—at least, for masons—have declined, there is nothing approaching to stagnation here, and it now contracts have been mostly for alterations, many of these are of considerable magnitude. The Standard Insurance building is now completed for the roof, and the sculptors are engaged on the design which is to ornament the large central pediment, which will, with the sculptured frieze, give a very ornate character to the large and lofty frontage, which is otherwise plain as an example of the old-fashioned Classic of the city. The edifice occupies a very prominent site in George-street, at the north-west corner of St. Andrew-square. The Commercial Bank is removing a large tenement in a similar corner at Shandwick-place and Queensferry-street, which will doubtless be a great improvement to the west-end of Princes-street. Another alteration nearly completed in this thoroughfare at, or near, the west end, is an interesting addition which towers above all its neighbours, with frontages in the two adjoining streets. The style is composite and indescribable, not falling under any very definite variety of Renaissance or Classic; but the arrangement and selection of the surface decorative details present some ingenious novelties which give something of Egyptian character to the whole. The structure over the ground floor is carried in four floors on a single low segmental arch of polished granite, and adopts the gable as the prominent feature of the somewhat narrow frontage. The walls, however, are really carried by concealed ironwork, and the whole interior is a network of iron for fireproof floors. The moulded quoins with alternate blocks generally found at the ground level, are here exalted to the uppermost floor and over the windows formed in this fashion—a deeply projected corbelled cornice, without frieze, is carried round the semi-octagonal piers at the extremities. These corners are ornamented with substantial finials with scrolls around the base. A stilted semi-circular window with heavy mullion in the centre lights the gable, and over this is a niche for life-size statuary. The elevation in Charlotte-street is similar.

A more important alteration is being begun in removing the present county buildings—which have a respectable Ionic portico in Parliament-square—facing St. Giles's Church; but the same character cannot be given to the elevation to the High-street, with its ugly Ionic pilasters, and the frontage to George IV. Bridge, which have been long a blot on the architecture of the city, ever since the Improvement Scheme of 1829 opened up the new thoroughfare. The new elevation appears to have been selected from economical considerations, or perhaps also from its adherence to the old and more severe style of Classic, which has given Edinburgh the name of "The Modern Athens." None of the premiated designs have been adopted. Preparations have been long in course of execution for adding another section of the reconstruction of the City Chambers—viz., the north-west corner and west side, adjoining the portion already erected. This will bring the north frontage into the line of Cockburn-street, and will be of portentous height. The half, or nearly the half, is to be built with rusticated masonry; but above this the ornamental character will be an outstanding feature with its pilasters and columnar decoration. This portion of the scheme, which is estimated to cost about £16,000, will contain the new council chamber. There is something of incongruity—in finding the details of Classic architecture posing in mid-air, and it

cannot fail to be a startling addition and indication of the disappearance of ancient before the advance of modern Edinburgh. It might have been better if the design for Cockburn-street frontage had made some concession to the old style—as has been so happily accomplished in the east side of North Bridge-street. An addition is to be made to the public library, and there are many minor alterations now in progress.

The three great undertakings—the N.B. Railway, the Caledonian Railway Hotel, and the west side of North Bridge-street—have made great progress. The first has all its elevations completed for the roof, and the central tower is well advanced. A large portion of the Caledonian Railway Hotel is being roofed, the upper floors of both are now conspicuous over the long line of trees which fringe the footway on the south side of Princes-street, and will form picturesque terminations to the thoroughfare, although there is a great contrast in the architectural detail. The N.B.R. building presents what is at present, and will be till the roof is finished, a confused collection of gables and turrets, whereas the other is adorned with only the commonest details of dormer gables. The tower of the former, when completed, will take its place with the Scott Monument and monumental architecture of the Calton Hill; but the very florid detail of the upper portion adds nothing to, but will rather detract from, its appearance at a distance. The stone is a light, cream-coloured freestone, where it has the advantage over the other, which is in red freestone, and in the portion first built has already taken on its dark and dirty coat. The reconstruction of the North Bridge-street to the east now shows above the hoarding in the High-street, and great progress has been made also in the Market-street frontage and interior walls.

The Blind Asylum in Nicolson-street is in course of reconstruction, with great advantage, doubtless, to the interior accommodation, but with rather a shabby elevation to the street, which will not bear comparison with the more elegant and ornate frontage of the Co-operative building now finishing beside it. The windows are heavily mullioned with fantastic timber sashes, and there is a wide and badly-proportioned timber oriel, recessed, upon the first floor, which would have looked better had it been an ordinary mullioned light.

Independently of larger undertakings now in progress, others are in the air (exclusive of the Usher Hall) with doubtful prospects of success, as a note of alarm has been sounded as to the increasing expenditure upon improvements, the rates having been nearly doubled within the last ten years, notwithstanding the great extension of the city boundaries. The results of this large expenditure are visible in removal of some insanitary slums and closes, and substitution on a moderate scale of better houses: in the purchase and costly equipment and maintenance of public parks and recreation grounds and gardens; in the liberal provision for hospital accommodation, and the erection of many large and expensive school buildings; in the costly cable tramway system which has already cost more than double the original estimate of £500,000.

The new infectious diseases hospital at Colinton, has set free for other uses the old fever hospital in Infirmary-street, and proposal has been made to convert it into a hospital for consumptives. The City has its own observatory, and it has been proposed to provide the department looking after the public health with an establishment of its own for bacteriological study, ventilation in all its branches, and kindred subjects. But the Usher Institute of Public Health is approaching completion, and should be sufficient, though gifted to the University, for all the scientific researches and practical study of hygiene required to keep this sanitary department of the city in the right road. Some arrangement will be found by which the civic authorities, without incurring another burden of expenditure, may benefit by an institution so completely equipped as the Usher Institute. The exodus to suburban districts has been very great for some years, and new tenements are still erected there; but notwithstanding all that has been done in many ways to improve the sanitary condition of the city, the average mortality remains as it has been, undiminished since the completion of the last great improvement scheme, at 18 per 1,000.

Church-building has been adding its quota to the city architecture. The fabrics are all of Gothic design. Two were recently opened, and two are

Later Decorated Gothic, with a range of tall

with the style, being too small. Economy in buttress-decoration is a marked feature of the T.F. Church (St. Stephen's) which has migrated to the Comely Bank district is also in Later Gothic, but of very different design, cum-

altogether externally the characteristic light and

THE PROGRESS OF NATURAL VENTILATION

It is an encouraging sign of the world-wide interest that is now being taken in all that concerns the improvement of the human environment, that the subject of natural ventilation applied in scientific form was until quite recently almost unknown. In Russia, that country are now rapidly advancing in the knowledge of the benefits to be derived from having fresh, pure air in their homes and halls, and in the practical application

There are, of course, greater difficulties to be met with in the employment of any system of ventilation in a country having the climate of Russia than are to be met with in this country with its more moderate and temperate climate. In Odessa, a seaport city of South Russia, the climate is very hot in summer, about 110 Fahr. in July, and below zero in winter, when most buildings, particularly dwelling-houses, are usually hermetically sealed up to keep the cold air out and the hot air in, rendering the internal atmosphere stifling but healthy or comfortable. These unhealthy conditions are now, we are glad to say, undergoing a gradual but unmistakable change, and the awakening interest in ventilation seems to be already bearing good fruit.

The Municipality of Odessa are at present erecting a general hospital in that city, which, when completed, will be one of the largest, as it bids fair to be the most salubrious, of hospitals in Russia, or, for the matter of that, in any country. The very best and most improved hygienic arrangements being used in all parts of

the building. The Municipality certainly deserve credit for the enlightened and public-spirited manner in which they have introduced these important sanitary reforms for conserving the public health, and has furnished an example which might with advantage be followed by many bodies corporate elsewhere when dealing with such matters, which are too often treated in a perfunctory and half-hearted

—and rightly so—considered to be of the first importance, very special attention was given to the subject, the principal ventilating engineers in Europe being invited to submit plans. There were, we understand, 34 schemes in all sent in, of which 10 were of the American type, and 24 being

All were mechanical with the exception of one, which was a natural system. The decision arrived at in respect to these plans was that a mechanical system should be adopted. It was resolved, however, that before selecting any particular plan from amongst the number submitted, a committee consisting of architects, and others qualified to judge, to investigate into the merits of the respective systems, as applied to buildings in different countries.

This committee commenced its labours in Odessa, where several public buildings are mechanically ventilated. It seems that in none of these buildings, however, though of the latest construction, the committee being informed

in each case that the ventilation was better and less objectionable without it, and it had therefore been disused.

The committee paid a visit to this country and made exhaustive investigations into the different systems in use here, including the natural system. Upon the completion of the investigations, the report of the committee was laid before the Municipality of Odessa, who had also received reports from other quarters, the result being that it was unanimously resolved that mechanical ventilation should not be employed, and that the natural system, submitted by Messrs. Robert Boyle and Son, Ltd., of London and Glasgow, be adopted.

As the Odessa Municipality is evidently a cautious, as well as progressive, body, it was determined, before finally accepting Messrs. Boyle's plan, to try a modification of it in a smaller hospital which was then being built, for the purpose of ascertaining how it acted under the climatic conditions prevailing in Russia. This was accordingly done, and the experiment seems to have been satisfactory, as Messrs. Boyle received the order to proceed with the ventilation of the large hospital, which they are now executing, a considerable portion of the work being, we understand, already completed. This is, we believe, one of the largest ventilating contracts which Messrs. Robert Boyle and Son have ever undertaken, and it certainly says a good deal for the efficiency of natural ventilation as applied by this firm, that it should have so successfully come through the severe ordeals to which it was subjected in this instance, and in competition with the principal systems which are in use.

The wisdom of the selection of natural ventilation by the Odessa Municipality would appear to be endorsed by the awards for ventilation at the Paris Exhibition, where the Boyle system gained the highest prize—two gold medals and one silver medal—against a host of competitors. It might indeed almost be called a world competition in ventilation, as all the best known systems in Europe and the United States were represented, and the jury was formed of eminent scientists, engineers, and sanitarians selected from different countries.

We cannot but accept this as strong evidence of the steady progress and efficiency of natural ventilation, particularly as the same system gained the 450 prize with grand diploma, the only prize offered, at the International Ventilation Competition held in London, when all the best-known systems of the day competed, the jury being composed of scientific and practical experts of the highest standing.

We understand that the natural system has now been applied by Messrs. Boyle to several public buildings in Odessa, and that plans are at present being prepared for the ventilation of the cathedral in that city.

The system is also used by the Russian Government for the ventilation of Government buildings in St. Petersburg and other places, and is employed in the Russian Navy, sixteen warships being now fitted throughout, whilst others are in progress. In this country natural ventilation for ships likewise seems to be making considerable headway, being adopted by the leading steamship companies. H.M. ship *Hardinge*, the large Indian troopship which was completed last November, is fitted throughout with the Boyle system, it being the one selected in competition with mechanical and other systems.

In a report from a First Sea Lord of the Admiralty the Boyle natural system is highly commended as applied to battleships in the British Navy. It is also used in the principal Continental navies and steamship companies, including the North German Lloyd, Messageries Maritimes, and the Compagnie Générale Transatlantique, the whole of the last named company's Transatlantic fleet being fitted throughout, including the last two new steamers, *Le Lafram* and *Le Sureau*, each registering over 10,000 tons.

This system was the one selected by Dr. Nansen for the *Fram* on his expedition to the North Pole, and a plan has been prepared, by desire of Commander Scott, for the ventilation of the *Discovery*, the Antarctic exploration ship at present being fitted out at the East India Dock.

Scientists, sanitarians, and architects—such as Lord Kelvin, Sir Douglas Galton, F.R.S., Sir Benjamin W. Richardson, F.R.S. (first President of the Sanitary Institute), Professor Sir George Aitchison, R.A., Mr. Alfred Waterhouse, R.A.,

Sir Arthur Blomfield, A.R.A., and others, have testified to the efficacy of natural ventilation as achieved by the Boyle system, and several Royal Commissions on ventilation have also commended it. The fact that this system has now been applied to over 100,000 buildings in this country alone speaks volumes for the efficiency of natural ventilation when correctly applied, and as the system is used in all parts of the world, the total number of buildings in which it is employed must be very large.

The system has the great advantage that it can be easily and cheaply applied to any kind of building such as churches, schools, halls, hospitals, &c., and there is nothing about it that can get out of order or that requires attention, the "Air-Pump" ventilator being always in effective operation under any and every condition of the weather, even in a dead calm with a dense fog, or in the closest day in summer.

The late Mr. Robert Boyle, sen., whose name is so well known in connection with his scientific discoveries and philanthropic work, and who died about twenty-five years ago, had always had the idea that a method of ventilation that could be universally employed must be of the simplest and most economical character, and it was, as a co-worker with Professor Faraday over fifty years ago, that this idea was developed between them, and culminated later on in the system which has made the name of Boyle in connection with ventilation a household word throughout the world, the Messrs. Boyle (father and son), being practically the founders of the profession of ventilation engineering, which they have raised by their efforts to the dignity of a science.

The present Mr. Robert Boyle, who has been the moving spirit for the past thirty-five years in the "sanitary crusades," which were then inaugurated, has visited almost every country in the world, preaching the doctrine of health, inculcating a knowledge of the benefits to be derived from breathing pure air, and demonstrating how this could be secured by all in a very simple manner by utilising the powerful and unceasing forces of nature which were ready to our hand.

There is probably no one who has a more comprehensive or extended knowledge of the science and practice of ventilation than Mr. Robert Boyle, or who has done more to advance the cause of ventilation, he having devoted the whole of his life to the exclusive study and practical development of the subject; and his numerous sanitary inventions are well known and appreciated both in this country and abroad.

Perhaps the best index of the success of his work and of the progress of natural ventilation—they being synonymous—is to be found in the expansion of the business of which he is the head, the works of the company having, we understand, to be added to each year to meet the influx of contracts and orders until they now are, both in London and Glasgow, more than three times the size they were a few years ago, and it is further proposed to erect still larger works to cope with the ever-increasing demand for their health-saving appliances; the latest patented form of the "air-pump" ventilator, which has double the extracting power of previous forms, being now supplied at a price that brings it within the reach of all, which is a distinct gain to natural ventilation, and should materially help it in its progress.

THE ART OF GARDEN-MAKING.*

AFTER the appreciative notice which we published some months ago of Mr. Thomas Mawson's book on landscape gardening as associated with the formal arrangement of gardens and their accessories in relation to the house, we are not surprised that the work in question has so soon reached a second edition. In saying this we recognise that the volume has obtained its success mainly on its own merits, not the least of which is the author's appreciation of the increasing interest which is to be observed among many classes in the subject of horticulture and all that belongs to gardens and their maintenance. Mr. Mawson has not ignored little details, and he realises the possibilities of small gardens, and, basing his standpoint on the reasonable condition that the garden should belong to the building to which it forms the setting, he is at once able to

The Art and Craft of Garden Making. By THOMAS H. MAWSON, garden architect. Illustrated by C. E. Mallowes and others. Second edition. Royal quarto. Net, 25s. London: B. T. Batsford, 1901.

The new public baths at Northam, Southampton, presented to the town by Mr. Tankerville Chamberlayne, M.P., were opened last week. The total length of the bath is 150ft. by 30ft. wide, with 6ft. 6in. of water at the deepest and 3ft. 3in. at the shallowest end. The bath contains, when full, 133,000 gallons, and can be emptied in twenty-five minutes. Adjoining is a tower, 15ft. high, with three-dialed clock. The works have been carried out by men under the direct supervision of Mr. W. B. G. Bennett, borough surveyor, at a cost of £20.

Building Intelligence.

BEDALE. A new Wesleyan church at Tanfield, Bedale, was opened on Friday, June 21. The building is of stone, in the Decorated style, with a tower and spire. The interior woodwork of pews and open wagon-headed roof is of pitch-pine, and the tracery windows are filled with leaded lights, a special feature being a fine figured window in the transept. Accommodation is provided for about 250 persons, and there are vestries for the choir and for the minister, from the latter of which convenient access is gained to the pulpit. A bandroom is placed at the rear of the church, and the old chapel adjoining the new premises will be used as a school. The architects are Messrs. J. Morley and Son, of Bradford.

DRURY LANE THEATRE. The alterations which are now being carried out, from the plans of Mr. Philip E. Pilditch, at Drury Lane Theatre will have the effect of considerably improving the interior of the house by the time the autumn play is produced. The first and grand circles are being reconstructed in fireproof materials, and the timber beams, &c., replaced by steel girders, carrying a concrete floor, all the supporting pillars with the exception of a single row being done away with. In both these circles a new row of seats is to be added in front of those now existing, and this change, together with a rearrangement of the existing seats, will bring the total number of rows up to six in the grand circle and to seven in the first circle. In the stalls, too, extensive alterations are being made. Two boxes on each side are to be abolished, and the space thus gained is to be filled with seats, two central gangways being constructed to facilitate ingress and egress. The accommodation of the stalls will in this way be increased by 88, to 462 in all. Improvements are also to be made in the remaining boxes on this level, and a new refreshment-bar is to be added on the P. side. The cost of these changes, together with the re-decoration of the house, is put at from £12,000 to £15,000, a sum which brings up the total amount that has been expended on the theatre within recent years to £40,000 or £50,000.

LONDON COUNTY COUNCIL. At Tuesday's meeting of this body the adjourned report of the Highways Committee, dealing with a number of tramway proposals to be brought forward in the next Session of Parliament, came up for discussion. The proposals, all of which were adopted, were for the construction of new tramways of a total length of about twelve miles on the north side of the Thames, at an estimated cost, for the construction of the tramways, of about £430,700, and for street widenings of about £185,400; while, as regarding the south side of the Thames, the total length of the tramways was about 16½ miles, the cost of construction of the tramways was estimated at £591,200, and of the street widenings at £722,100, in which sum was included the estimated cost, £29,500, of the widening of Queen's-road, Peckham. A long discussion took place on the recommendation of the Housing of the Working Classes Committee that the Works Department be intrusted with the building of Seymour and Somerset Buildings, St. Pancras, at an estimated cost of £23,932. Sir J. D. Poynder moved an amendment to the effect that the work be put out to contract, stating that whereas in 21 buildings carried out by the Works Department there was an excess over the architect's estimates of £25,657, in the case of 16 works carried out by contractors the difference in favour of the Council was £17,576. On the other hand, Mr. Waterlow urged that the competition of the Works Department had led to the Council getting much lower tenders than was formerly the case. The builders were struggling to do the Council's work as cheaply as possible, possibly with the idea of wiping out the Works Department. Mr. Frank Smith contended that they got full value for money in the work done by the Works Department. Mr. Burns, M.P., asserted that of all the builders who had done work for the Housing Committee only one had had a second dose—the supervision exercised over the work broke the back of nearly every jerry builder. On a division the recommendation was carried by 79 votes to 28. On the recommendation of the Parks Committee an estimate of £6,000 was approved, and it was agreed to ask Parliamentary powers in the next Session to enable the Council to purchase at this price the old buildings known as the Rookery, Clapham Common, for addition to the common.

A discussion took place on a recommendation of the General Purposes Committee to omit from the standing orders the clause relating to variations in the rates of wages and hours of labour during the continuance of a contract. The committee reported that, if the clause was retained, contractors would endeavour to cover their liability by considerably increasing the amount of their tenders, and that the increase would fall upon the Council. Several of the Labour members protested in the interests of the workmen against the omission of the clause, and an amendment to refer the recommendation back was moved by Mr. Dew. After a discussion lasting over an hour, the amendment was carried and the recommendation referred back.

LIVERPOOL CATHEDRAL. At a meeting of the General Cathedral Committee on Monday there was a full attendance. Earl Derby, who presided, said a reconstitution of the committee was necessary, as they were making use of the 1885 Act, portions of which had expired. On the motion of Sir W. Forwood, additional members were elected, and, on the proposal of Lord Derby, the Hon. A. Stanley, M.P., and Mr. F. M. Radcliffe were chosen hon. treasurers. Canons Penrhyn and Willink, Mr. R. A. Hampson, and Mr. Arthur Earle were appointed hon. secretaries. Mr. Hampson said that under the Act of 1885 an executive of 15 was appointed. To make it open to the Cathedral Committee to reappoint the executive they had obtained the resignations of such gentlemen as had survived. It was therefore open to that meeting to reappoint the executive. To make it more thoroughly representative of the diocese it would be necessary to enlarge it to 24. An executive committee of 24 was then appointed. The Bishop moved that the executive be requested to confer with the rural deaneries for the formation of committees, the object being to bring the whole diocese to work on the cathedral. This was adopted. Sir W. Forwood said the amount subscribed was £138,420. He hoped before the foundation-stone was laid they would have £200,000.

MORBORNE, HUNTS.—The parish church was reopened, after restoration by the Bishop of Ely, on Thursday in last week. The church—a twelfth century—had during the past decade been gradually falling into a most dilapidated condition. Messrs. Thompson, of Peterborough, carried out the work of restoration. It was found necessary to underpin nearly the whole of the building. The nave, aisles, and the transepts were partially rebuilt. The chancel, which contained sedilia and double piscina, was entirely re-roofed, the supports being of oak. The Norman columns of the nave were underpinned, and new bases inserted, whilst the Early English arches with which they are surmounted refaced and restored. The foundations of the curious red-brick embattlement tower were re-established. During the underpinning of the west wall of the nave discovery was made of an almost perfect effigy of some ecclesiastical dignitary. The stone, which measures 6ft. 11in. in length, was found over four feet below the floor of the nave, and has been erected on a base in the south-west corner of the south aisle. A stone coffin was also unearthed in the nave whilst the underpinning of the columns was being carried out. The church has been furnished with seats of pitch-pine, and the decrepit and "moss-covered pulpit" displaced by a new one. The cost of the restoration amounted to £2,200.

PORTOBELLO, EDINBURGH. The new baths were opened yesterday (Thursday). The baths, which are built of Dumfriesshire red stone, contain swimming, Turkish, spray, and douche baths. Facing the sea, on the first floor are retiring and reading rooms. The vestibule is divided into two parts by columns and an entablature of Doric order. To the left and right of the entrances are the passages to the plunge baths. In the portion allotted to gentlemen there are six first-class baths, with 12 dressing-boxes, while in the parts used by ladies there are four baths with eight dressing-boxes. The hall in which the large pond is laid out measures 95ft. by 55ft. The swimming-pond is 75ft. by 35ft., the depth of the water being 7ft. at one end and 3ft. 6in. at the other. Along the sides of the hall are fixed 56 dressing-boxes. Cast-iron columns, with moulded capitals, divide the hall longitudinally, and support the gallery and the roof. The three sides of the pond are surrounded by the gallery, which is staged and seated for onlookers. The south end of the hall

is portioned out as a gymnasium, which covers in space 32ft. by 30ft. At the north end of the baths is an alcove 33ft. by 14ft. in depth. Situated between the ponds for men and women are the second-class baths. Mr. R. Morham, the city architect of Edinburgh, prepared the plans. The cost has been over £30,000.

PORTLAND, E. The new wing added to the P. P. Accident Hospital, through the Drapers' Company, was formally opened by the Bishop of London on Thursday in last week. The gift of the Drapers' Company consists of a block of buildings, erected at a cost of about £14,000, and is situated on the eastern side of the surgical-ward block of the old building, being an extension of the out-patients' department, and an addition of three medical wards and quarters for the staff. The basement is devoted to the out-patients' department, with waiting, examining, and dressing rooms for each department, the former out-patients' department being converted into a general waiting-room. Upon the ground, first, and second floors are the three wards (41ft. long by 28ft. 6in. wide), for 10 medical cases each. The wards are approached through the surgical wards, but have, in addition, their own staircase and outside escape-stairs, with ward-scully, bathroom, sinkroom, and other sanitary accommodation in spurs at the east end, the sisters' room at the west end, and dayrooms upon the ground and first floors. Each ward has a balcony upon the south front, overlooking the docks and river. The floors are laid in terrazzo mosaic in panels and borders, the walls and ceilings being plastered. The windows are provided with extract ventilation-flues. The third floor provides accommodation for the nursing staff, and includes a nurses' sitting-room (32ft. by 12ft. 6in.), with large square bay, and seven nurses' bedrooms, besides linen storage and sanitary accommodation. The fourth and fifth floors are occupied by servants' bedrooms and a broad flat for recreation, a portion of which is covered with a shelter roof. The new buildings, like the old, are constructed throughout with fireproof floors and stairways. The builders are Messrs. Harris and Wardrop, of Limehouse, who have executed this and the whole of the other additions in connection with the main hospital building. The architect was Mr. Rowland Plumbe, F.R.I.B.A., of 13, Fitzroy-square, the architect of the hospital.

SLEDMORE.—There has just been wrought in Sledmere Church, East Yorkshire, the last of a series of elaborate diapers in stone. Last year saw those at the east end of the aisles completed; now the carvings at the end of the chancel are finished. The diapers at the north side are leaves and acorns, vine-leaves and grapes, lilies, roses, maple, thorn, strawberry, ivy, hazel, thistle, trefoil leaves, with their fruits or flowers treated in the conventional manner of the period. In the two bottom rows, imposed on the foliage are various emblems of the Passion. In all there are over eighty diverse patterns. On the south side the diapers are hexagon in form, with incurved sides, thus giving a series of small trefoils, which are sunk into panels with crosses worked on their sides. The hexagons are filled with various conventional renderings of foliage. At the chancel end are two areas of square panels, one on either side, from the floor level to the top of the retable. The designs are mostly symbolic foliage, while above the retable they are symbolic subjects. The work has been designed and executed by Mr. John Baker, of Kennington, S.E.

WEST HAMPESTEAD.—Mr. J. D. Gilbert, chairman of the Fire Brigade Committee of the London County Council, on Monday laid the memorial-stone of a new fire-station which is to be built by the Council, from the designs of Mr. W. E. Riley, F.R.I.B.A., their superintending architect, at West Hampstead. The site is at the junction of West End-lane and Mill-lane, and faces the old village green of West End. It is in the centre of a district which until quite recently was open fields, but which is now almost entirely built over, and will, it is estimated, before many years have a population of 200,000. The total cost of the site and building will be £13,129, and the station will contain accommodation for a steam fire-engine, a horsed escape, and hose-cart, and in addition there will be a workshop, watch-room, recreation-room, stabling for four horses, stores, and quarters for station officer, nine firemen, and two coachmen and their families. Four of the firemen and their families are to be accommodated in cottages at the rear of the main building.

COMPETITIONS.

Newport-road, and will accommodate 1,000

Competitive plans for the proposed new church were submitted from selected architects, and the plan No. 1 as the most desirable for adoption. The plans were submitted by Messrs. Jethro A. Cossins, Peacock, and Bewlay. The plans will be submitted to Christ Church trustees, who made a grant of £2,500 towards the building fund. The trustees have not yet decided to proceed with the erection of the church, as, including the grant mentioned, only £5,500 has been secured towards the estimated total cost of £10,000.

The plans submitted in the final competition for the Blue Coat Hospital, at Liverpool, have been on view in the Exchange News Room of that city these past two days. The joint architects with Messrs. Hobbs and Arnold Thornely, of Castle-street, Liverpool, has been selected. Mr. W. D. Carter was the assessor. The cost of the building is £10,000.

PROFESSIONAL AND TRADE SOCIETIES.

The members of this society paid, on Friday and Saturday, a two days' visit to Durham and district. The party, which consisted of Messrs. G. H. G. and J. H. G. and about two o'clock on Friday afternoon, and at once proceeded to the Cathedral, where they were met and welcomed by the Dean (Dr. Kitchen). The very rev. gentleman conducted the party, over the church and buildings connected with it, including the Deanery, where the party, who numbered some 40 in all, were entertained to tea. The visitors afterwards inspected different places of antiquarian interest in the town, and subsequently dined together at the County Hotel. On Saturday the party visited the Castle at Durham, and other places of interest in the locality.

The monthly meeting of the executive of the Yorkshire Federation of Building Trade Employers was held, on Friday, at the Savings Bank, Scarborough. Mr. Longden (president), of Sheffield, in the chair. It was reported that the master builders of Malton had joined the Federation, and steps were being taken to form a branch there. The meeting lasted nearly four hours, the principal subject of discussion being the Bradford dispute. The Federation unanimously decided to support Bradford and Shipley employers by every legitimate means during the dispute.

The plans for a new municipal lodging-house, to be erected in Wade-street and River-street, St. Philip's, Bristol, are in a forward state, and the health committee will shortly invite tenders for the work. It is proposed to erect a building which will contain 102 beds. The cost of the site was about £1,550, and the engineer's estimate for the building was £5,150, exclusive of furniture.

Mr. L. A. Sutherland-Tawett, inspector under the Local Government Board, held an inquiry at Grafton Wood, Hales Owen, on Tuesday, into the application by the Hales Owen District Council for sanction to borrow £1,125 for works of sewerage in the parish of Hill.

Messrs. Walter J. Pearce, Ltd., of Manchester, have appointed as London representative Mr. Leonard Laskey, at 10, Newman-street, W., who will keep a stock of sample work, glasses, drawings, and books, and being personally acquainted with the technical details of the stained glass business he will be able to deal with all inquiries promptly upon the spot. Mr. Walter J. Pearce will himself, as heretofore, be in London as often as occasion requires for personal advice and consultation, and will call time and time by appointment at shortest notice.

Engineering Notes.

At a recent meeting of the directors of the London and North-Western Railway Company, instructions for the work to be proceeded with are to be given shortly. The improvements are estimated to cost, approximately, £25,000. The works authorised by the directors comprise the practical rebuilding of the station on the up-side; the lengthening, widening, raising, and roofing-in of the up platform; the provision of new refreshment-rooms and dwelling accommodation for the attendants; the extension of the station-approach on the up-side, and the roofing-in of the cab-yard; the provision of a bridge with lifts for luggage between the up and down platforms; and the widening of the Warwick-road bridge. It is not at present in contemplation to alter the station buildings on the down-side.

Railway Improvements at Crewe. A great undertaking which the London and North-Western Railway have had on hand at Crewe for several years past is just approaching completion in the shape of the so-called "big dig," whereby underground lines have been constructed to cope with the vast amount of goods traffic passing through Crewe, in working which hitherto without delay and congestion the utmost difficulty has been experienced. Now, at the end of some five years' work, which has given employment to thousands of men, the difficulty has been solved, and with the help of the 95 miles of roads above and below ground now constructed, goods trains can now be passed through Crewe with the utmost celerity. There are three tunnels, which had to be driven through stiff clay, and in many places there was only 5ft. between the roof and the surface over which the traffic was being continuously carried, and with which no interference could be allowed. Nine bridges have been erected over cuttings and elsewhere, the bridge over the main road leading to the station being the greatest, the retaining wall in some places being 20ft. thick. The opportunity has been availed of at the same time by the company to introduce the American method of signalling by electricity.

CHIPS.

The service of electric tramcars at Devonport was formally started by the mayor of that borough on Wednesday. The system extends over ten miles of roads.

The Lord Mayor laid, on Tuesday, the foundation-stone of the Baltic Mercantile and Shipping Exchange, about to be erected in St. Mary Axe, on what has long been known as Jeffrey-square. Possessing a Portland stone frontage to St. Mary Axe of 86ft. and to Bury-street of 72ft., the exchange and offices connected therewith will occupy the whole of the ground floor, the principal entrance, consisting of an outer arched vestibule 32ft. by 16ft., and an inner hall 40ft. long by 24ft. wide, the secretarial offices and board-room being on either side. The exchange itself is to be 152ft. long, 94ft. wide, and 30ft. high, with a central dome 30ft. in diameter. The architect is Mr. T. H. Smith.

The arrangements for the memorial to Archibald Forbes, LL.D., which is to take the form of a tablet with a medallion portrait, in the Crypt of St. Paul's Cathedral, have been almost completed.

A new Wesleyan Chapel was opened on Friday at West Tanfield, Masham. The building is in the Decorated style, and has a tower and spire, rising to a height of 70ft. The roof is an open one, and the seats, which provide for about 180 persons, are of pitch-pine. The chapel consists of a nave and two transepts, one of which is for the organ and choir. There are two vestries adjoining the chapel, and kitchen and cellar below. The chapel has been erected from the designs of Mr. W. J. Morley, F.R.I.B.A., Bradford and Harrogate. The total cost of the work has been about £2,000.

The Edinburgh and Leith Gas Commissioners made an official inspection on Monday of the new buildings in course of construction from plans by Mr. Herring, their manager. These include a retort-house and coal-stores, the latter designed to hold from £18,000 to £20,000 tons of coal, the whole handling of the coal being accomplished by machinery. There are also a new purifying house and pumping station, and a large gas-holder. The tank is 252ft. 6in. in diameter, and when fully inflated will stand about 172ft. high. It will hold six and a half million cubic feet of gas, and its capacity is equal to that of all the gasometers now existing in the city.

TO CORRESPONDENTS.

[We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many elements upon the space allotted to correspondents.]

It is particularly requested that all drawings and all communications respecting illustrations or literary matter should be addressed to the EDITOR of the BUILDING NEWS, Clement's House, Clement's Inn Passage, Strand, W.C., and not to members of the staff by name. Delay is not unfrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

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Correspondence.

LONDON DISTRICT SURVEYORSHIPS.

To the Editor of the BUILDING NEWS.

SIR, A great many people are asking why there is so much delay in filling up the five or six vacant districts, some of them having been for months under a temporary management, the interim surveyors being allowed to carry on private practice. In the old days the vacancies were filled up in a few weeks; and the present arrangement does not agree with the views expressed by the Council to add to the dignity of the office and secure able men giving their whole time. I am, &c., SURVEYOR.

ARCHITECTS' TERMS.

SIR, I beg to inclose an interesting advertisement from the Arnold and Bestwood Floral and Horticultural Society's Schedule of Prizes. I am, &c., NOTTINGHAM.

S. Mayfield, Practical Architect and Surveyor, Cavendish-street, Arnold, prepares plans, specification, quantities, &c., attends the works at least twice daily. Terms: 1 to 2 per cent. N.B. No charge for quantities. All the usual commissions on locks, bolts, bars, fire-gates, &c., absolutely refused. The above terms cover all.

"HOW LOW HATH THE MIGHTY FALLEN!"

SIR,—To-day (Sunday) the General Election for the Commune of Massa-Carrara is taking place here. In the Piazza del Duomo, situated

sewage. In section 25 of the Act such drain as is necessary for the drainage of such premises was necessary to take the refuse of the house, not one suitable for the inhabitants at large. The section did not extend to different drains for different purposes. Mr. S. G. Lushington, for the respondent, submitted that the local authority was expressly placed within the discretion of the local authority, and if it had been properly exercised, without misconduct or negligence, it could not be interfered with. Here they had the surveyor's report in the very words of the section. The principle was stated in "Smith v. Morley Rural Council." The local authority ought to take into consideration the fact that there were two existing sewers, as that affected the question as to what was necessary for the effectual drainage of the house. The Court held that the justices were wrong. Section 25 of the Act empowered the local authority to take into consideration certain matters, and only certain matters, for the purpose of satisfying themselves whether the drain proposed was effectual for draining the house—viz., the size, material, level, and fall. If matters beyond the requirements of the section were asked for, it was in effect asking the owner of the house to subscribe to a general system of drainage. That was not the intention of the Act. The decision of the justices must be reversed. Appeal allowed.

Reversible Casement Windows. The plaintiffs were George E. Clare, architect, E. Wareham, watchmaker, and S. Upshall, agent, all of Chelmsford, and the defendants the Crittall Manufacturing Company, Limited, of Braintree, Essex. The action was for the recovery of £50 due, and damages for breach of contract under an agreement made with the defendant company in October, 1898. Mr. J. F. Rawlinson, K.C., and Mr. C. E. Jones, instructed by Mr. A. G. Maskell, solicitor, of Chelmsford, in opening the case for the plaintiffs, said they were the inventors of a patent reversible casement hinge, which device was developed in October, 1898. It consists of a stiff vertical bar, with horizontal arms at top and bottom integrally joined together, so as to become one strong, rigid C-shaped appliance, which is hinged at the side to the frame, and at the end of the arms to the centre of the top and bottom rail of the casement, in order that the casement can be opened in the usual way on the side hinges for ventilation, and by releasing a catch, reversed on horizontal arm hinges. The object of this device was to enable outward-opening casements, and those on either side, to be cleaned from the inside, and thus avoid the window-cleaning accidents that were so frequently occurring. A model of the invention—produced in Court—was taken to the Crittall Manufacturing Company on October 13, 1898, and the manager was much taken up with the idea. After some negotiations, a provisional agreement was drawn up, by which the defendants obtained the sole right to manufacture under certain royalties, and the plaintiffs received £50 down, the defendants agreeing to pay another £50 when the final specification was produced, with an expert's opinion as to validity. Upon searching the patent records the plaintiffs found that other devices had previously been patented, one by Rump, German, and another by Osterberg, an Austrian. The latter failed to complete his English patent, and it therefore became public property in this country. Although these two inventions, which are virtually the same, are somewhat similar in appearance to the plaintiffs' device, they both lack the important and vital element of the plaintiffs'—viz., the strong vertical bar connecting the two arms, making the three one homogeneous whole that renders it of practical utility and a success commercially; whereas the lack of this in the other two rendered them both quite useless for any practical purposes. In January, 1899, the defendants suggested that the matter should come to an end in July, 1899, plaintiffs obtained the final specification, and produced Mr. Bousfield's, K.C., report, stating that in his opinion Clare's patent was not an infringement of any other patent. In June, 1899, the defendants advertised the casement widely, and called it the "Crittall Safety Casement," and up to the present time had been manufacturing to Clare's specification, some marked "Rump's Patent," and some not marked at all. Counsel produced various models of the different inventions, and called Wareham, who explained the models and demonstrated the difference between plaintiffs' device, and those of Rump and Osterberg. Evidence was also given by Mr. George Barker, patent agent and consulting engineer, Birmingham, and Mr. Dunn, A.R.I.B.A., architect, of Birmingham, who both confirmed Mr. Wareham's statement. Mr. J. A. King, agent for the "Mark Shiplift" of Queen Victoria-street, London, was then called to prove that he, with Mr. C. A. Line, of Birmingham, had seen the Crittall Manufacturing Co.'s Stand at the Building Trades' Exhibition this year, and their representative had told them that they should mark the casements satisfactorily without the vertical connecting bar, but that they

had found the vertical bar was absolutely indispensable: this fact was further borne witness to when Mr. Crittall stated that the only casement he had made without it was one in his own shop. Mr. Johnson, builder, of Chelmsford, then gave evidence of having seen many of the casements made and fitted up by the defendant company in buildings in London, all, in his opinion, without a doubt according to plaintiffs' specification. He further alleged that he should be pleased to use the plaintiffs' patent casement wherever possible; but Rump's he would certainly not use unless he was compelled to. Messrs. Clare and Upshall subsequently gave evidence in support of the previous witnesses. Mr. Witte, K.C., for the defendants, submitted there was no case for plaintiffs, and that the validity of plaintiffs' patent was not proved. Mr. P. H. Crittall, managing director for the defendant company, said he went to Hamburg in May, 1899, and entered into an agreement with Rump to acquire the sole right to manufacture his patent, and since then he had done so; but he admitted that casements had been fitted that were not marked "Rump's patent," which he regretted. Mr. Brunton, manager for Messrs. Crompton and Co., Chelmsford, witness for the defendants, stated that superficially the casement from the defendant company was like plaintiffs' patent; but in principle it was Rump's. The jury at once decided that plaintiffs' patent was a valid one, and that defendants had been working under plaintiffs' patent. The judge gave judgment for the plaintiffs for £50, with costs, and ordered an account to be furnished to plaintiffs. Stay of execution for ten days was granted.

WATER SUPPLY AND SANITARY MATTERS.

KINGSBURY, MIDDLESEX.—Mr. H. Percy Boulnois, M.I.C.E., inspector of the Local Government Board, held an inquiry at the urban district council's offices on the 19th inst. into the application of the council to borrow £10,500 for works of sewerage and sewage disposal. Mr. S. Slater Grimley, C.E., the consulting engineer to the council, explained the various details of the scheme and the mode of treatment to be adopted at the outfall works. At the close of the inquiry the inspector viewed the proposed outfall works and the works of the proposed sewers, and promised to report at an early date.

MONMOUTH WESTERN VALLEYS DRAINAGE. — Messrs. Beesley, Son, and Nichols, of Westminster, engineers, have just reported to the joint committee dealing with the drainage question of the Monmouthshire Western Valleys, a district with a population of over 100,000. The report advocates a huge trunk sewer scheme, the sewer to be carried out into the Bristol Channel near Peterstone, discharging by g.avitation. The estimated cost is £170,000.

STAINES: THE NEW RESERVOIRS.—The New River, West Middlesex, and Grand Junction Companies agreed three years since to jointly construct large reservoirs at Staines. Operations were commenced about the middle of 1893, and the extensive works, under the supervision of Messrs. Walter Hunter and Reginald E. Middleton, by whom they were designed, are rapidly nearing completion. The intake from the Thames has been constructed on the Middlesex bank of the river, about 300 yds. above Bell Weir; here also are sluices, screens being used to prevent floating matter from entering the conduit. From this point the water will be taken by means of an open conduit to the pumping station at Staines, whence it will either be conveyed direct to the works of the Companies at Hampton, where filtration takes place, or else be pumped into the two new reservoirs. These reservoirs will have a holding capacity of 3,300 million gallons. The circumference is $4\frac{1}{2}$ miles, and they are $1\frac{1}{2}$ mile long by $\frac{3}{4}$ -mile at their northern end, and nearly a mile wide at their southern end. The embankments vary from 21 ft. to 35 ft. in height, and are formed of the excavated material with a thick bank of puddled clay in the centre. Inside, the slopes are being thickly lined with concrete to a depth of 15 ft. The new works cover an area of 700 acres, of which the reservoirs occupy 425 acres. At Bell Weir the sluices and the machinery for working them are practically finished, and so is the conduit along which the water flows by gravitation from the intake to the pumping station at the reservoirs. At the latter the boiler-house and the engine-house are complete, though the boilers are not yet in place and the pumping engines are only in course of erection. Most of the piping between the pumps and the reservoirs is also laid, and the aqueduct from Staines to Hampton has been formed. The two reservoirs are both finished as regards their embankments. The more northerly of the two is rapidly nearing completion, for little else remains to be done beyond putting in the concrete facing, and of which about three-quarters are already in place. It is hoped that this reservoir will be ready for use in the course of the present year. The other, or southern, reservoir is in a less advanced condition, the concrete facings not having yet been begun, but

it will probably be finished next year. Each of the Companies is responsible for one-third of the total cost of the works, which it is estimated will be over £1,000,000, and each has a right to one-third of the additional supply, amounting to 35 million gallons daily, or to 45 million gallons under emergency, by consent of the Local Government Board. The general contract for the execution of the works is in the hands of Messrs. John Aird and Sons.

STOCKPORT WATER SCHEME.—The Committee of the House of Lords presided over by Lord Pirbright have given their decision on the Bill by which the corporation of Stockport seek power to go to the Hayfield district to obtain an additional supply of water, at an estimated cost of about £800,000. Mr. James Mansergh, of Westminster, is the engineer of the scheme. The committee found the preamble proved. They refused the clause asked for by the Heaton Norris Urban District Council, by which at any time within the next few years the council would be allowed to exercise the option given under the existing Act of purchasing the portion of the water undertaking within their district, the price not to be enhanced in respect of the cost of any part of the new works that may then have been carried out. All the inhabitants of Little Hayfield were to retain their present supply of water free, and with regard to Hayfield itself a quantity up to 100,000 gallons a day is to be supplied at cost price. It was stated that terms had been arranged with the Calico Printers' Association, the owners of several works in the district, who are to be treated as favoured consumers, receiving any necessary supply at the rate of a penny per thousand gallons in addition to the usual free allowance by way of compensation.

CHIPS.

A stone fountain erected at Bellingham in honour of the yeomanry and volunteers of North Tyne who fought in the Boer War, 1900-1, was unveiled last (Thursday) evening. A conspicuous feature in the structure is a representation of a man in khaki, standing at ease in light fighting order under a canopy supported on four granite pillars. The sculptor is Mr. John Milburn, of Hexham.

On Wednesday week special services were held at St. Stephen's, Shottermill, in thanksgiving for memorial gifts recently presented to that church. The carved-oak pulpit is in memory of the late Queen Victoria. On the front panels there are designs of the Imperial crown and the crown of thorns, the Cross of Christ and the orb and sceptre. The reredos, new choir-stalls, altar-rails, oak panelling, and colouring of the chancel are the gifts of the Rev. J. Wallace. The whole of the work was carried out by the Guild of Handicraft, and was designed by Mr. C. R. Ashbee. In the centre panel of the reredos is the figure of our Lord on the Cross, with St. Mary and St. John on either side. On each of the wings is a devotional figure of an angel. The new east window is also a special gift.

The new hospital buildings erected at Morden Hill, Lewisham, for the Nursing Sisters of St. John the Divine, from the designs of Messrs. Barnes-Williams, Ford, and Griffin, by H. L. Holloway, the foundation-stone of which was laid by H.R.H. the Duchess of Albany in June, 1899, were formally opened on Monday last by the Hon. Mrs. Talbot.

At the Co-operative Stores, Churwell, Leeds, on Saturday, new drapery and boot departments were formally opened. Mr. B. H. Wood is the architect.

The new Palace Theatre, in Belgrave-gate, Leicester, was opened last week. It has been built from plans by Mr. Frank Matcham, of London.

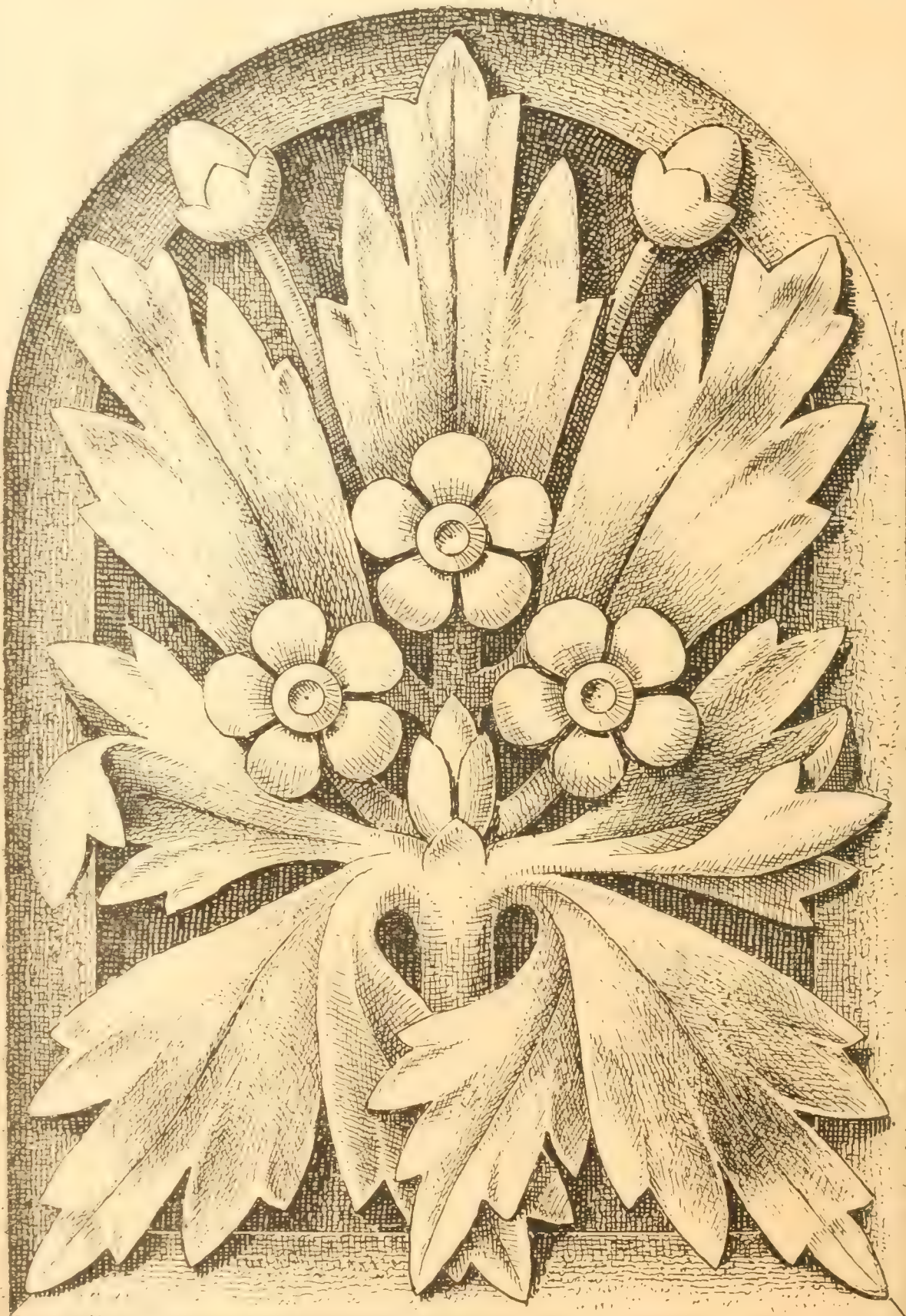
At Monday's meeting of the Heckmondwike District Council, Mr. Geo. Carter, of St. Helens, was elected resident electrical engineer, at a salary of £156 per year, to devote the whole of his time to the duties.

The opening of a new Welsh Baptist Chapel at Ponkey, Ruabon, took place on Monday. The edifice, which has been built at a cost of £2,500, affords seating accommodation for upwards of 700 persons. The architect was Mr. Owens, Liverpool, and the contractors were Messrs Jones and Evans, Oswestry.

There left the Tyne on Friday a self-docking pontoon dock, the largest of the kind afloat, built to the order of the Spanish Government by Messrs. R. Stephenson and Co., of Hebburn. This huge structure has been built in six sections, and is capable of lifting a ship of the weight of 13,000 tons. It was taken down the river to sea in charge of seven tugs. Its destination is Port Mahon, in the island of Minorca, and three tugs are now towing it to that port.

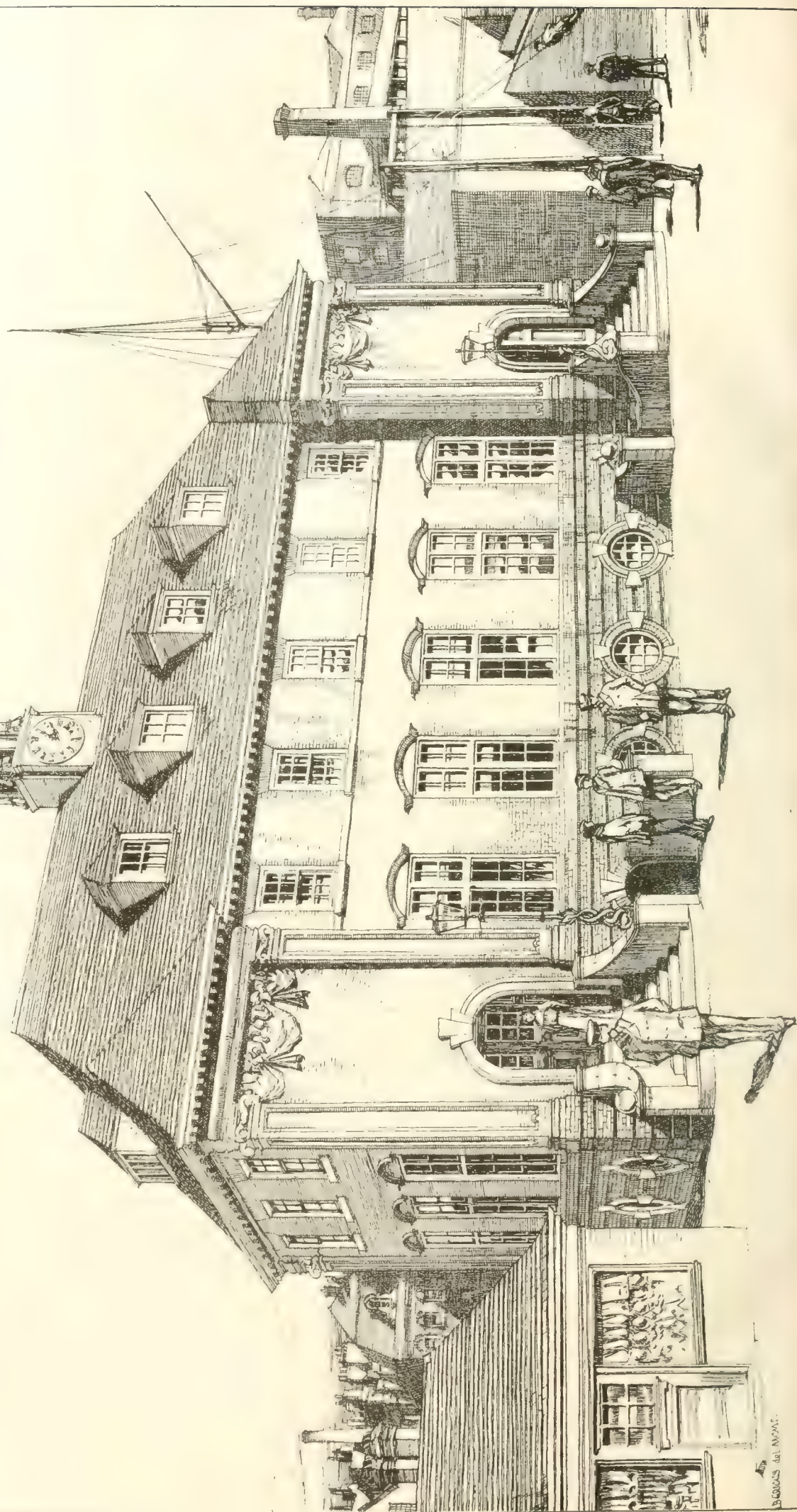
The foundation-stone was laid of the new schools for Barrow School Board at Vickerstown, Walney Island, on Saturday. The site is near North Scale, and the building will cost £10,000, and provide accommodation for 600 children.

The contractors for the new naval barracks at Portsmouth last week took over the military station hospital, which is the site of the officers' quarters. A temporary station hospital has been built on the same site, and this was formally taken over by the military authorities on Saturday. The officers' and men's quarters, which are to accommodate 4,000 normally, and considerably more in times of pressure, are to be completed in two years from the present.



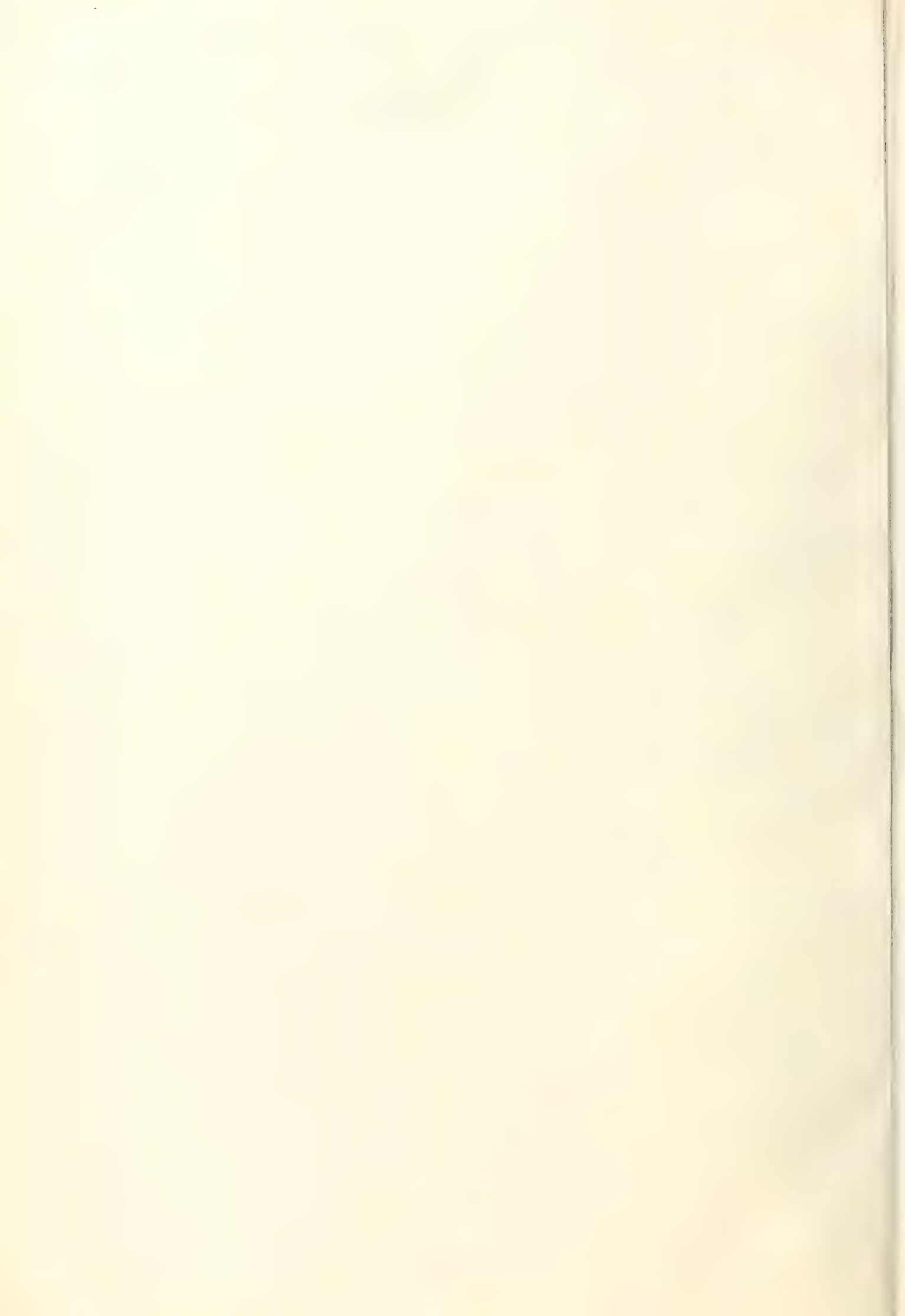
ART FOLIAGE (NEW SERIES.—PLATE V.—A STONE PANEL.—By J. K. COLLING.

THE BUILDING DEPT. JUNE 28 1901





HOUSE AT SEPTINOAKS, KENT

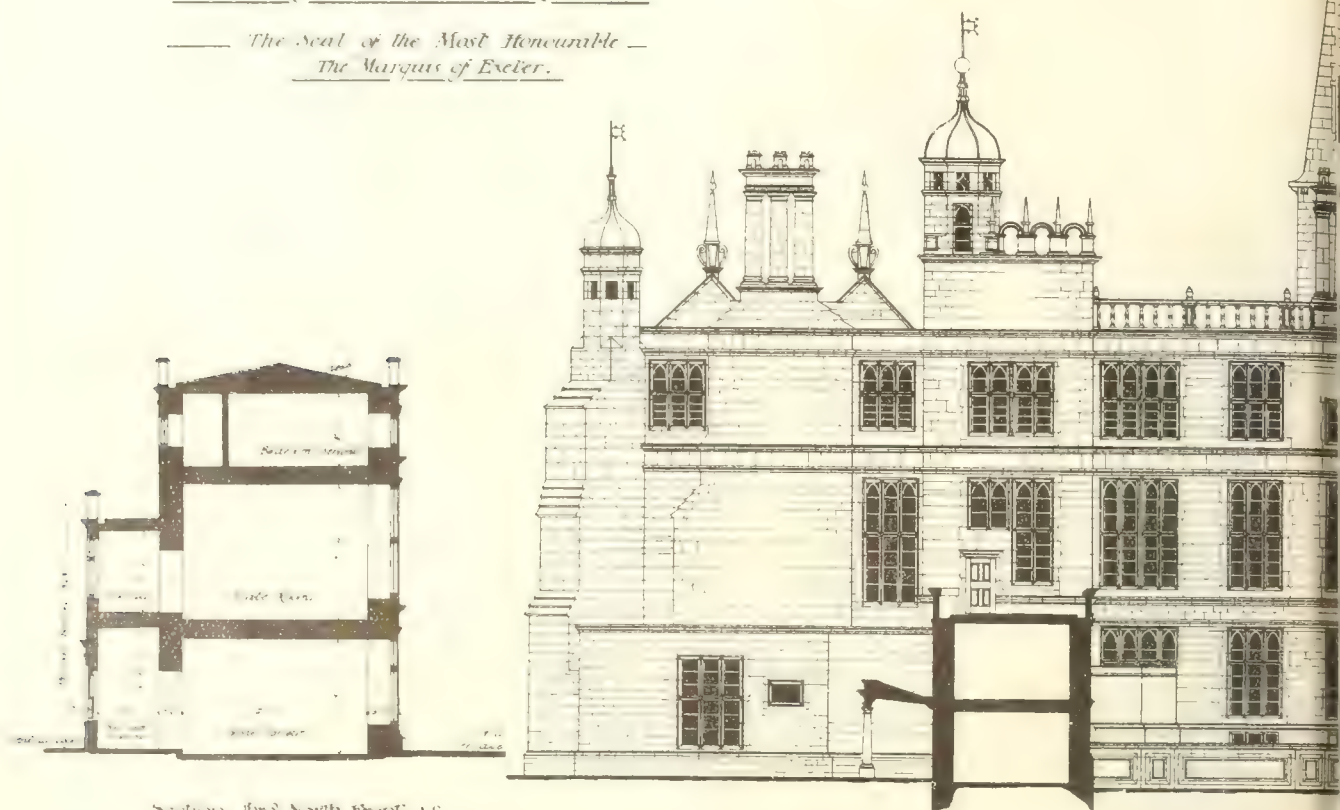




BURGHLEY HOUSE NEAR STAMFORD.

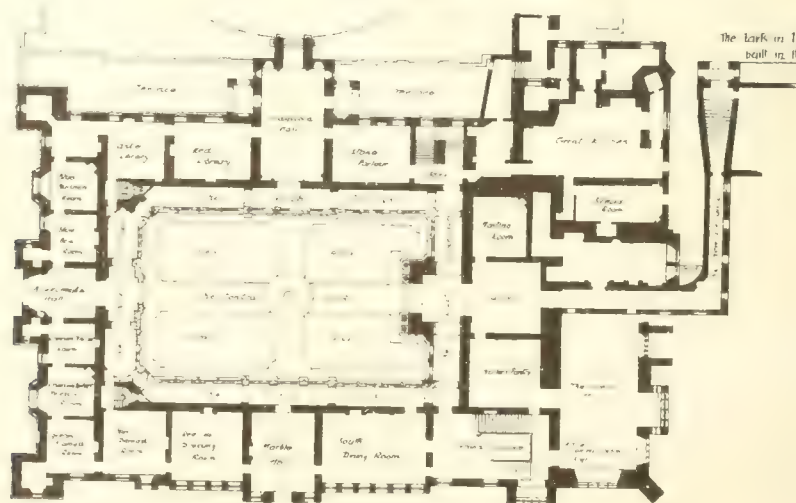
NORTHAMPTONSHIRE.

*The Seat of the Most Honourable —
The Marquis of Exeter.*



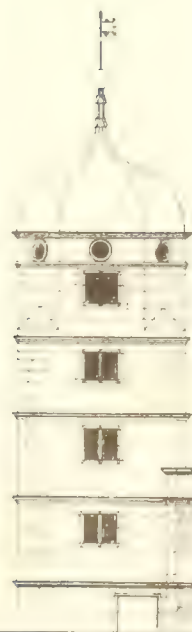
Section thro' North Front AB

The Great Kitchen.



Plan of Burghley House

Scale 1/4 inch = 1 foot



Lodgers, Bathing & Servants' Rooms

JUNE 27, 1901

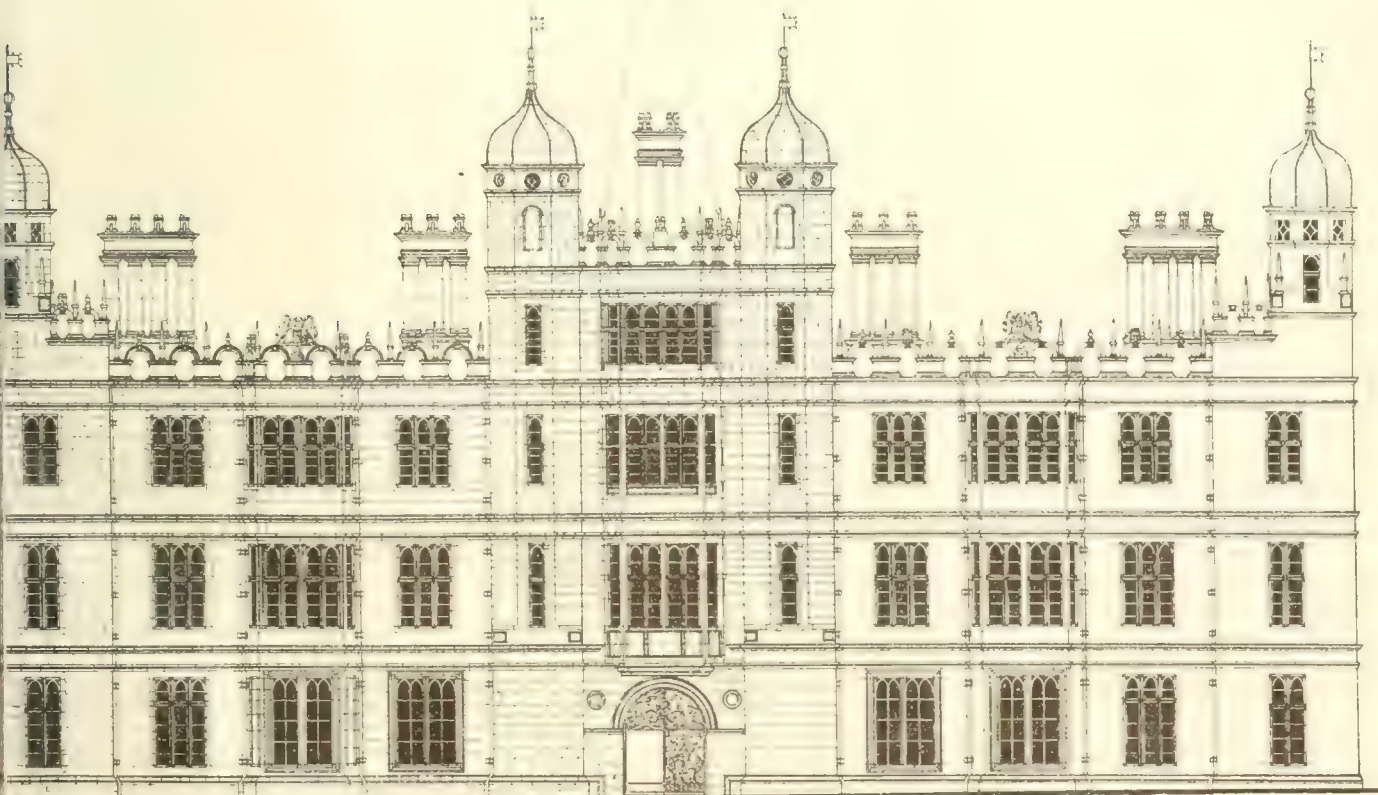
• MEASURED AND DRAWN BY H. F. TRAYLEN •



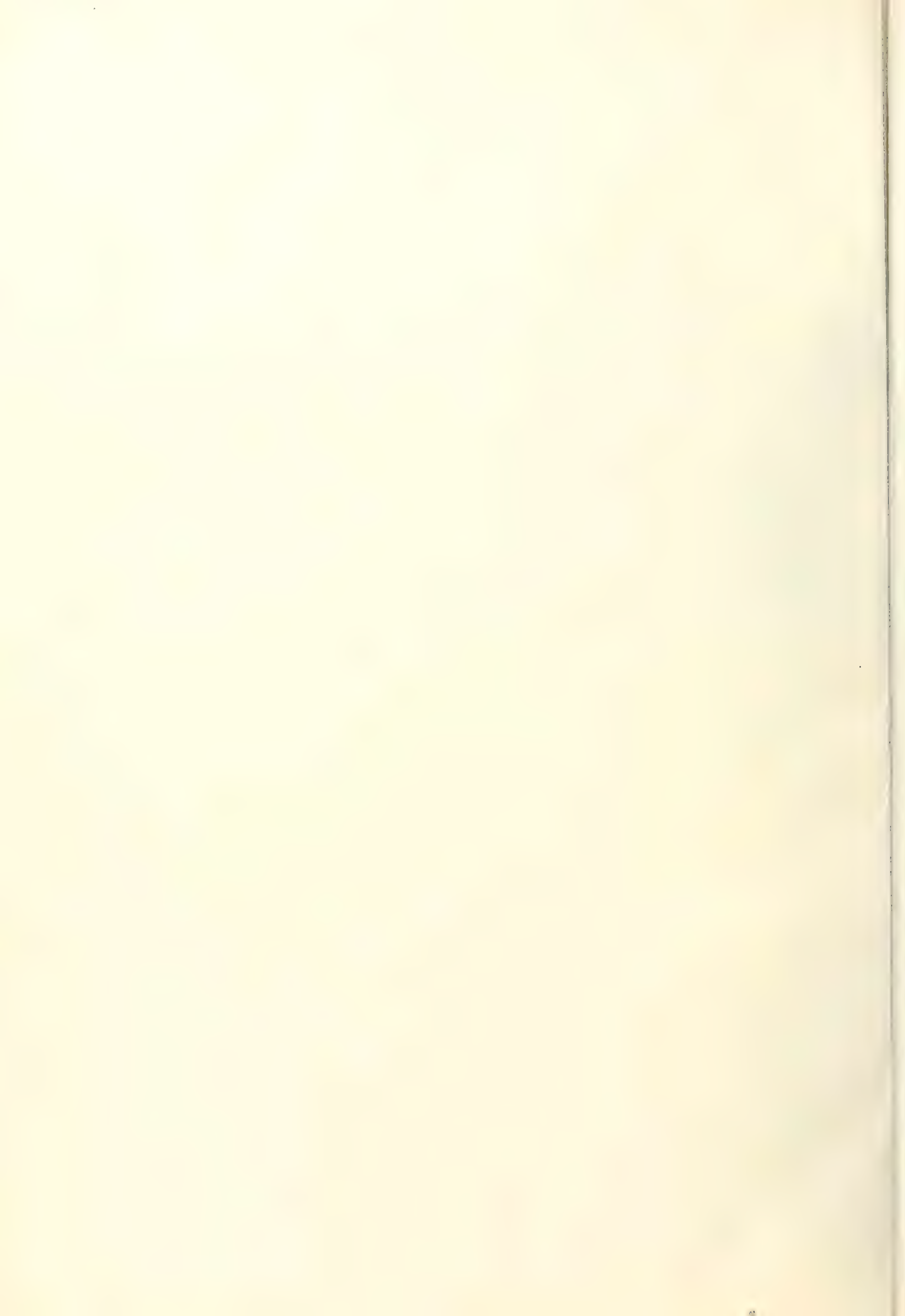
The North Front.

State Rooms 1st Floor.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



The West Front.



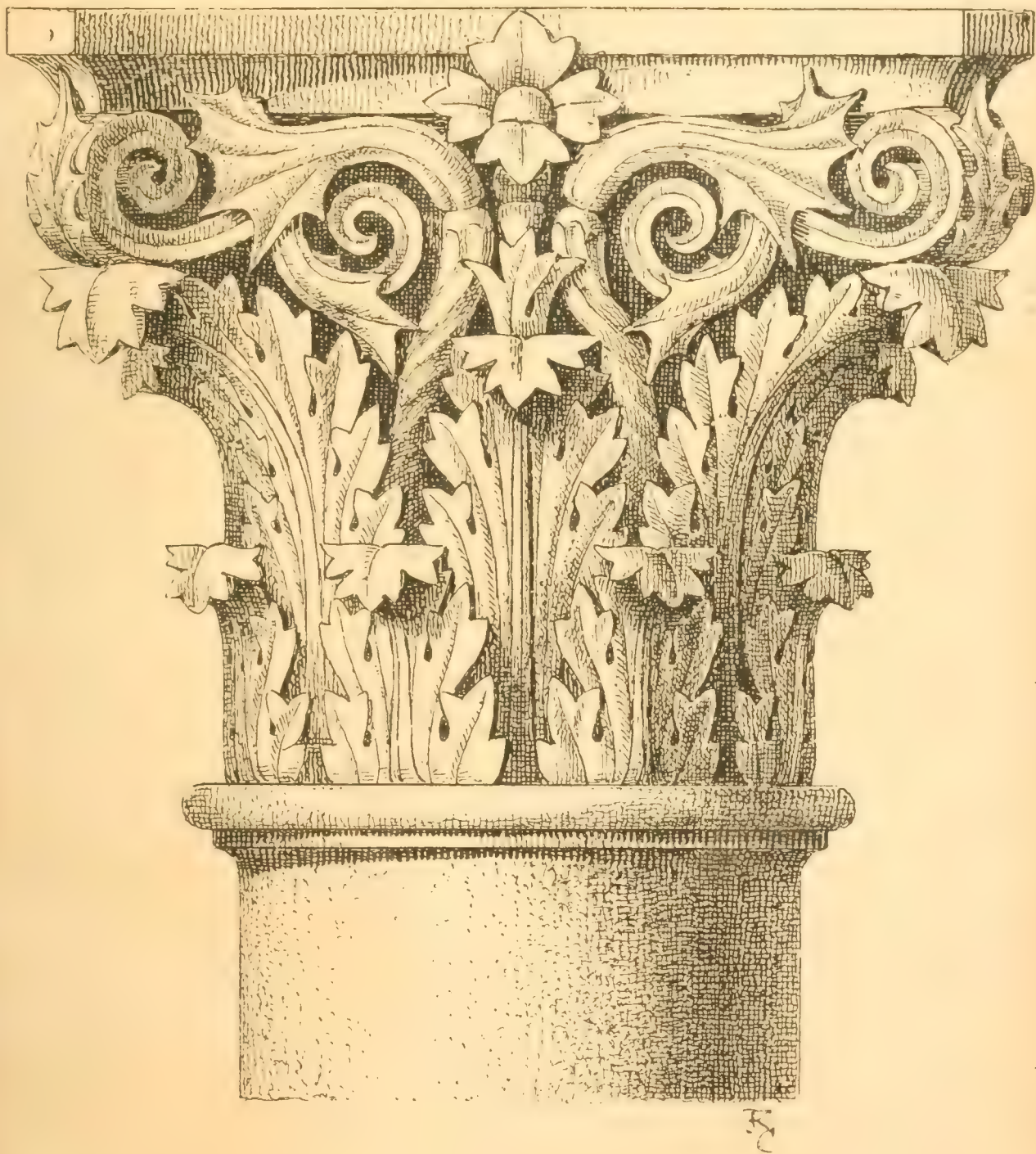


THE INTERIOR OF THE TEMPLE OF VESTA





INTERIOR OF BRADY'S CATHEDRAL CHURCH, ST. LOUIS.
FROM THE EAST



ART FOLIAGE (NEW SERIES).—PLATE VI.—A VARIATION UPON THE ROMAN CORINTHIAN CAPITAL.
BY J. K. COLLING.

Our Office Table.

now been finally approved by the Local Government Board. Some paragraphs of the old by-

introduced. In accordance with the salutary and now well-established custom of the Council, this document has been placed on sale, and can be

having made inquiry as to the non-arrival this year of the usual invitation for tender for the supply of locks, &c., to the Admiralty, have received an official reply to the effect that the samples of locks usually supplied are undergoing alterations, and that this fact explains the delay. Seeing that the locks in question are of the most antiquated type, and needlessly costly to reproduce, manufacturers in Wolverhampton and Willenhall will be anxious to see what the "alterations" are, and how far the locks in question are brought something like "up to date" in style and adaptation to their use. The Staffordshire

from time to time some rather curious experiences with the great spending departments of the State. The War Office was obtaining their lock supplies from a London factor who procured them from American firms. A remonstrance was made, and as a result of an official inquiry the orders for locks found their way into the hands of British makers. The Admiralty authorities show much more business-like capacity in the purchase of stores than the War Office. It is not known whether the War Office manufacturers every facility in the matter of tendering. The War Office, on the other hand, invited to inspect them. The result is that the London factor or "middleman" secures a large proportion of the small contracts, and the departments pay his profit in addition to that of the producer. An offer made some time since of the Wolverhampton Chamber of Commerce to provide a room for War Office samples of local products at a nominal rental was rejected by the department.

A similar lock is supplied by the Institution of Civil Engineers, with the support of the Institutions of Mechanical Engineers and Naval Architects and of the Iron and Steel Institute, to consider the advisability of standardising the various kinds of iron and steel sections, and, if found advisable, then to consider and report as to the steps which should be taken to carry such standardisation into practice. The committee is composed as follows: Mr. James Mansergh (President of the Institution of Civil Engineers), Sir Benjamin Baker, Sir John Wolfe Barry, Sir Frederick Bramwell, Sir Douglas Fox, Mr. G. Ainsworth, Mr. William Dean, Mr. A. Denny, Mr. J. Allen McDonald, Mr. E. Windsor Richards, Mr. James Riley, Professor W. C. Unwin, and Dr. J. H. T. Tudsbury (hon. secretary). Mr. Leslie S. Robertson, of 28, Victoria-street, S.W., has been appointed secretary to this committee, which has already commenced its work by taking evidence tendered by engineers, manufacturers, and contractors bearing upon the subject of the inquiry.

An arrangement has been made by Mr. C. Purdon Clarke, C.I.E., of the South Kensington Museum, with Sir Benjamin Stone, M.P., for an exhibition of his historical photographs, which are now being put in order for convenient display at the Victoria and Albert Museum. It is hoped that the exhibition of these pictures will encourage not only the further development of the central collection at the British Museum, but also the forming of similar collections in provincial centres. Among the typical pictures to be shown are several relating to the ceremony of reading the Manx laws on the Tynwald Hill, in the Isle of Man; whilst others are associated with Windsor Castle—such as views of the historic rooms in the interior, picturesque views of the castle, and matters personal to the Royal Family. The Houses of Parliament are represented by views of the

as well as scenes upon the Terrace; added to which the personal element is introduced and a large number of members a part in the collection. The collection is also illustrated by realistic scenes of Henry VII.'s Chapel, the Jerusalem Chamber, Abbot's Yard, and the Pyx Chapel, side by side with the more unfamiliar subjects of the wax effigies (still preserved in the Abbey). A large selection has also been made of views of the Tower of London.

The Newcastle-on-Tyne City Council discussed at great length, at their last meeting, a report of a special committee with regard to the city engineer's department. The report was eventually adopted, and Mr. William G. Laws, M.Inst.C.E., who is now 65 years of age and has served the corporation for over twenty years, will retire from his post as from December 31st, but will receive a retaining fee of £500 a year as consulting engineer, so that the city will yet benefit from the results of his long experience. The committee were also authorised to advertise for a city engineer, whose age is not to exceed forty years, at a commencing salary of £1,000 per annum.

A DEPUTATION from the Council of the Royal Institute of the Architects of Ireland, headed by the President, Sir Thomas Drew, has waited on the Local Government Board of Ireland to make representations against the system under which unqualified men are frequently employed as architects, civil engineers, and clerks of works by urban and rural district councils and like public bodies, and to urge a demand for an amendment of the present Act which would enable the Local Government Board of Ireland to provide a safeguard against such appointments. The Board promised to give full consideration to the views put forward by the deputation.

ALTHOUGH the existence of valuable marbles has long been known in the southern portion of the Ural Mountains, they have not been worked until within the past year. Two quarries, in which 150 workmen are employed, have been opened within two miles of the Samara-Zlatoust Railway, and considerable quantities of yellow, green, grey, black, and white marble have been taken out. The white marble is being used in the construction of the Alexandra III. Museum at Moscow. The veins are said to be between three and four feet thick, but owing to lack of improved methods a large percentage of the marble is broken. Green and brown jasper is also mined in the neighbourhood of Zlatoust, the largest works being in the village of Melvidovo. This stone is used for tables, wash-basins, handles for knives and forks, is susceptible of a high polish, and is equal to the Ekaterinburg stone.

CHIPS.

A large clock with two illuminated dials, with Cambridge chimes, has just been fixed at Tibshelf Church, Derbyshire. It is fitted with all the latest improvements, and generally to the designs of Lord Grimthorpe. Messrs. John Smith and Sons, Midland Clock Works, Derby, have carried out the work.

At Blymhill parish church, Staffs., on Friday, a rood screen, dividing the chancel from the nave, and a window, placed in the south side of the chancel, were dedicated.

At Christ Church parish-room, St. Albans, the extension of the building was opened by Lady Grimthorpe on Thursday in last week. The architect was Mr. Hansell.

The Select Committee on the London United Electric Tramways Extension Bill have, after a long inquiry, passed the preamble as to 15 miles of road out of the 22 miles submitted to them. The extensions granted comprise the whole of the company's proposals with regard to the group of lines in Kingston, Surbiton, Malden, Esher, and the Dittons and Molesey, including the connections over the Kingston and Hampton Court Bridges (subject to the widening of the former structure) with the company's authorised Middlesex tramways. The Committee also passed the company's proposed electric tramway between Kew Bridge and Richmond, and the important connection with Surrey from Hammersmith Broadway over Hammersmith Bridge. The proposed lines from Richmond to Putney and from Hammersmith Bridge to Ranelagh-gardens were rejected. The Committee have refused to grant to the local gas and water companies in the district special protective clauses against damage by electrolysis.

The board of award in the competition for plans for the public building in Cleveland has selected the design submitted by Mr. Arnold W. Brunner, of New York.

Some very extensive repairs are now being carried out at the head of Hythe Pier, Hants, by Messrs. Grace and Co., contractors, of Southampton.

At Bath, on Monday, the Dowager Lady Tweedmouth formally opened the artisans' dwellings which have been erected in the Dolemeads by the corporation, under the Housing of the Working Classes Acts. The houses have been erected from plans by Mr. C. B. Fortune, the city surveyor, and the builder was Mr. Toogood, of Bath.

Overhead trolley electric tramcars have commenced running this week between East Ham and Ilford.

At Sevenoaks, on Thursday in last week, the foundation-stone was laid of a new hospital for hip diseases in Eardley-road, Tub's Hill. The building will at present consist of an administrative block, and one wing of 16 beds, and will cost £8,000. Mr. T. Graham Jackson, R.A., is the architect.

The town council of Swindon have adopted the plan of Mr. A. J. Gilbert, who wins a premium of £50, for the enlargement of the town gardens. The estimated cost is £1,871 17s. 6d.

The Harbour Board for Southampton have under consideration an extensive scheme of quay reconstruction and extension, prepared by their surveyor, Mr. C. A. Poole, and estimated to cost £44,000. They have decided to proceed forthwith with the first section, which will probably involve an outlay of about £15,000.

The new small-pox hospital, Tyne Dock, is being warmed and ventilated by means of Shorland's patent double-fronted Manchester stores with descending smoke-flues and patent Manchester grates, the same being supplied by Messrs. E. H. Shorland and Brother, of Manchester.

The growing village of Radlett is being sewered under the direction of the Watford Rural District Council. Mr. G. Lailey is the engineer.

On various days last week, officials of the Great Eastern Railway travelled over the route from Hedingham, via Wethersfield, Finchingfield, Bardfield, and Thaxted, to Elsenham, with a view to commencing operations in connection with a light railway, an order for which was granted by the Board of Trade some time ago. The line will open up Halstead and the Colne Valley generally with the four places mentioned, and will be a great convenience to the large brickmaking industry at Sible Hedingham. It will be of the usual gauge. The Colne Valley Railway Station at Hedingham has been recently enlarged. Elsenham is 35 miles from London, on the main line to Cambridge.

Mr. A. A. G. Malet, A.M.I.C.E., one of the inspectors of the Local Government Board, attended at the urban council's offices, Hexham, on Friday, to hold an inquiry into an application made to the Local Government Board for sanction to borrow the sums of £220 and £420 for works of private and public street improvements respectively.

The Bishop of Ripon reopened on Saturday the 15th-century church of St. Mary at Whitkirk, after restoration at a cost of £3,000.

A start on the widening of the Promenade at Blackpool from the new works at South Shore, near Victoria Pier, is to be made as soon as the season is over, the current year's estimates allowing of an expenditure of £60,000, and the surveyor contemplates spending £15,000 per month during the winter. The corporation, however, are undecided as yet as to whether the widening should be 100ft. seawards or only 60ft., as originally intended.

The House of Lords' Committee has passed the preamble of the Stockport Corporation Bill, the object of which is to obtain powers to construct additional waterworks to meet the growing demands of the inhabitants in the area supplied by the corporation. The expense of the scheme is estimated at over £800,000. The engineer is Mr. James Mansergh, F.R.S., P.Inst.C.E.

At the last meeting of the Newcastle-on-Tyne City Council a report was presented from the Tramways Committee, showing that up to the present the council had entered into fifty-four contracts amounting to £582,245, of which £292,495 had been spent.

The House of Commons Accommodation Committee, in their report submitted to the House on Wednesday afternoon, recommend an extension of the smoking-room accommodation for strangers, and of the dining-room accommodation which can be made available for lady visitors. Some improvements in respect to the accommodation for ladies in the rooms at the back of the Ladies' Gallery are also proposed. The total cost of the improvements will be about £27,000. The committee propose that, in case the consent of the Treasury is obtained, they shall be carried out in the course of the coming Recess.

The Great Yarmouth Board of Guardians have adopted plans by Mr. A. S. Hewitt, of that town, for a new workhouse laundry at an estimated cost of £3,500.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY TO-DAY. Carpenters' Company. Carpenter Examination. Practical Work. 10 a.m. Titchfield-street. All day.

SATURDAY. 10 o'clock. Carpenters' Company. Carpenter Examination. Viva voce. Carpenters' Hall. 12 noon.

Architectural Association. Visit to All Saints' Convent, Colney, St. Albans. Train from St. Pancras 2.20 p.m.

THE ARCHITECTURAL ASSOCIATION.

JUNE 29. SECOND SUMMER VISIT. ALL SAINTS' CONVENT, COLNEY, ST. ALBANS. 10 o'clock. Carpenters' Company. Carpenter Examination. Viva voce. Carpenters' Hall. 12 noon.

The Earl and Countess of Jersey will formally open the new board schools at Southall on Wednesday, July 31.

A stained-glass window has been placed in the church of St. Sepulchre, Holborn, by the vicar, the Rev. T. W. Gibson, in memory of his father. The window illustrates the removal of the body of the dead Christ from the sepulchre.

The parish church of St. Mary at Wansford, Hunts, is being restored from plans by Mr. J. C. Traylen, A.R.I.B.A. This will include the general repair and underpinning of the tower, which has a fine Early English broach spire, a more suitable roof with a higher pitch for the nave, with four clerestory windows, and a new chancel, with space for vestry, organ, &c. The unsightly modern wooden gallery will be removed. The contract has been taken at £1,620 by Mr. Haliday, of Stamford.

Trade News.

WAGES MOVEMENTS.

SWANSEA. The Swansea master builders have decided to agree to arbitration on the question of their labourers' wages, between 54 and 64, per hour. As an alternative they offer to allow the men to return at the old rate of 54d.

CHIPS.

The foundation-stone of a new volunteer drill hall was laid at Horncastle last week.

Among the readers of papers to whom the Council of the Society of Arts have awarded the society's silver medal for lectures given during the session of 1900-1901 are: Dr. W. Schlich, C.I.E., F.R.S., for "The Outlook for the World's Timber Supply"; Mr. F. B. Behr, for "The Proposed High-Speed Electrical 'Monorail' between Liverpool and Manchester"; Mr. P. R. Macquod, for "Evolution of Form in English Silver Plate"; Mr. William Burton, F.C.S., for "Recent Advances in Pottery Decoration"; and Mr. Hugh Stannus, F.R.I.B.A., for "Some Examples of Romanesque Architecture in North Italy."

The Local Government Board's sanction has been obtained by the urban district council of Littlehampton to the borrowing of £14,630 for water-supply works. Application is to be made for another £8,000.

Satisfactory progress continues to be made with the construction of the Ayr electric tramways, which extend from St. Leonard's Church, Ayr, to Prestwick Cross, a distance of four miles. For the first three and a half miles from St. Leonard's Church the track is practically completed.

Building operations in connection with the Margate Kursaal are to be recommenced shortly, and it is expected that the place will be ready for opening next season. The building is to be completed by the end of the year by Messrs. J. & W. Clark, F.R.I.B.A. The Margate Kursaal scheme, if not actually dead, is still in a state of suspended animation.

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immediate use.

LIST OF COMPETITIONS OPEN.

Hereford—Municipal Buildings	£100 merged, £75, £50	John Parker, City Engineer, Hereford	June 30
Hamilton—Widening Cadzow Bridge	£10 10s. 2nd, £10 10s. 3rd	The Town Clerks, Hamilton, N.B.	.. 30
Llanwrst—Market Hall, Council Chambers, &c., Market-sq.	£20	H. Preece, Clerk, U.D.C. Office, Llanwrst	July 26
Manchester—Fire and Police Station, &c. £75,000 limit	£300, £200, £100	The Town Clerk, Town Hall, Manchester	.. 31
Penance—Masonic Hall	£10 10s.	James Lowery, 59, Main-street, Epsom	Aug. 1
Penance—Laying-out Ground on Western Promenade	£21 merged, £10 10s.	T. H. Cornish, Town Clerk, Public Buildings, Penance	Sept. 1
Chelsea, S.W.—Public Baths, King's-road	100gs. merged, 50gs., 30gs.	The Public Baths Committee Office, 171, King's-road, Chelsea, S.W.	Oct. 1
Hinckley—Constitutional Club Premises		John Blakesley, Burbage-road, Hinckley	..
Dudley—Twenty Workmen's Dwellings		John Gammon, Borough Surveyor, Town Hall, Dudley	..

LIST OF TENDERS OPEN.

BUILDINGS.

Monkwearmouth—Rebuilding Blue Bell Restaurant	Newcastle Breweries, Ltd.	J. Oswald and Son, Architects, 33, Mosley-st., Newcastle-on-Tyne	June 29
Beverly—Grammar School		Botterill, Son, and Bilson, Architects, 23, Parliament-street, Hull	.. 29
Aberystwith—Pair of Villas, Buarth Mawr Estate		George Jones and Son, Architects, 17, George-street, Aberystwith	.. 29
Swansea—Pumping Station, South Dock	Harbour Trustees	A. O. Schenk, M.I.C.E., Harbour Offices, Swansea	.. 29
Keighley—Sunday School, West-lane		Moore and Crabtree, Architects, York Chambers, Keighley	.. 29
Belhelvie—Steading and Two Cottar Houses		Walker and Duncan, Architects, 3, Golden-square, Aberdeen	.. 29
Lansport—Pulling Down and Rebuilding New Inn	Mitchell, Toms, and Co., Ltd.	Arthur W. Yeomans, M.S.A., Architect, Chard, Somerset	.. 29
Halifax—Nine Houses		Medley Hall, Architect, Halifax	.. 29
Clonakilty—Business Premises		Miss Helena O'Brien, 16, Mill-street, Clonakilty	.. 29
Upper Norwood—Additions to Board Schools, Rockmount-rd.	Croydon School Board	Barrow Rule, Clerk, School Board Offices, Katherine-street, Croydon	.. 29
Barrhead—Hall		George M'Indoe, 18, Henry-street, Barrhead	.. 29
Elgin—Residence		R. B. Pratt, A.R.I.B.A., Bank Buildings, Elgin	.. 29
Grimsby—Grand Stand, Blundell Park	Great Grimsby Football Club	Arthur Gooseman, Architect, Cleethorpe-road, Grimsby	.. 29
Chester-le-Street—Primitive Methodist Church		Walton Taylor, F.R.I.B.A., 31, Westgate-road, Newcastle	.. 29
Edinburgh—Roof Alterations at House, Nelson Monument		R. Morham, Architect, P.W. Office, City Chambers, Edinburgh	.. 29
Braithwaite—Mixed School	Kirk Bramwith School Board	Frank Allen, Clerk, Bank Chambers, Doncaster	.. 29
Llanhilleth—Renovating Zion Congregational Church	Isaac Watson	Dd. Davies, 3, Brookland-terrace, Llanhilleth, Wales	.. 29
Hawkesley—Villa		J. J. Milligan, Architect, Whitby	.. 29
Keighley—Sunday School, West-lane		Moore and Crabtree, Architects, York Chambers, Keighley	.. 29
Swansea—Fish Market	Harbour Trustees	A. O. Schenk, M.I.C.E., Harbour Offices, Swansea	.. 29
Aberystwith—Pair of Villas, Buarth Mawr Estate		G. Jones & Son, M.S.A., Architects, 17, George-street, Aberystwith	.. 29
Londonderry—Sexton's House	Gortnessy Presby. Church Committee	M. A. Robinson, M.R.I.A.I., Richmond-street, Londonderry	.. 29
Thomastown—Renovating, &c., House		James F. Reade, A.M.I.C.E., John-street, Kilkenny	.. 29
Wolverhampton—Additions to Redcross-street Schools	School Board	T. H. Fleeming, Architect, 102, Darlington-street, Wolverhampton	.. 29
Llanelli—House, Marble Hall-road		J. Davies and Son, Architects, Cowell House, Llanelli	.. 29
Wrotham—Twelve Workmen's Dwellings	Urban District Council	J. Sharp, Surveyor, 5, Sunnyside, Borough Green, Wrotham	.. 29
Clonakilty—Business Premises		Miss Helena O'Brien, 16, Mill-street, Clonakilty, Ireland	.. 29
Stokenham—Cottage	A. F. Holdsworth	W. F. Tollitt, Architect, Tones	July 1
Cork—Six Houses, College-road	J. Mitchell	W. H. Hill and Son, Architects, 28, South Mall, Cork	.. 1
Morley—Three Terrace Houses, St. Andrew's-avenue	Frederick Lloyd	T. A. Buttery and S. B. Birds, Architects, Queen-street, Morley	.. 1
Dungiven—House	Public Health Committee	Henry Haslett, Drummeigh, Dungiven	.. 1
Glyncorrwg—House		G. P. Davies, Architect, Port Talbot	.. 1
Londonderry—Three Isolation Cottages, Foyle-hill		D. Fletcher, Executive Sanitary Officer, Cork	.. 1
Higham Ferrers—Wesleyan Church and School	Burial Board	Tom Dyer, Architect, 74, Albion-street, Leeds	.. 1
Scarborough—Cemetery Chapel		F. A. Tugwell, Architect, 102, Westborough, Scarborough	.. 1
Darlington—Additions to The Cottage		Clark and Moscrop, Architects, Darlington	.. 1
Kings-ton-upon-Thames—Workhouse Laundry Additions	Guardians	W. H. Hope, Architect, Hampton Wick	.. 2
Aylesbury—Internal Alterations at County Police-station	Bucks County Council	R. J. Thomas, County Surveyor, County Hall, Aylesbury	.. 2
Tyldesley—New Technical School	Tyldesley-with-Shakerley U.D.C.	John Holt, Architect, 6, St. Mary's-gate, Manchester	.. 2
Burton-upon-Trent—Cattle Shed, &c.	Corporation	George T. Lynam, Borough Engineer, Burton-upon-Trent	.. 2
Sowerby Bridge—Mason Work to Purifier House	Urban District Council	J. Marsland, Engineer, Gasworks, Sowerby Bridge, Yorks	.. 2
Handsworth, Yorks—Seven Houses	Waverley Coal Co.	Edmund Winder, Architect, Wharf-street, Sheffield	.. 2
Aldershot—Electric Lighting Station	Urban District Council	Nelson F. Dennis, A.M.I.C.E., Surveyor, Aldershot	.. 2
Darlington—Two Shelters	Parks Committee	The Borough Surveyor's Office, Town Hall, Darlington	.. 2
Barnsley—Three Houses, Longar-lane		Wade and Turner, Architects, 10, Pitt-street, Barnsley	.. 3
Preston-in-Holderness—Alterations to Board School	School Board	G. Thorp, Architect, 1, St. Mary's Chambers, Lowgate, Hull	.. 3
Hucknall—Two Schools, Newcastle-street and New-street	Hucknall-under-Huthwaite Sch. Bd.	J. E. Goodacre, Architect, 4, Stockwell-gate, Mansfield	.. 3
Londonderry—Soldiers' Home at Water-side	Miss Sandes	R. H. Nolan and Co., Derry	.. 3
Tipton—Renovating Burnt Tree and Great Bridge Schools	School Board	E. Richards, Clerk, Owen-street, Tipton	.. 3
Moylgrove—Cowhouses, &c.		J. Phillips, Treflith, Moylgrove, near Cardigan	.. 4
Bury St. Edmund's—Boiler-House, Chimney Shaft, &c.	Thingoe Union Guardians	H. P. Adams, F.R.I.B.A., 28, Woburn-place, Russell-square, W.C.	.. 1
Camberwell, S.E.—Public Libraries, Baths, &c., Well-street	Borough Council	Wm. Oxbow, A.M.I.C.E., Boro' Eng., Town Hall, Camberwell	.. 1

BUILDINGS

Thos. Arnold, Castle Buildings, Llanelly.....	July 1
A. Fidler, A.M.I.C.E., Borough Surveyor, Southend-on-Sea.....	1
Arnold Thorne, F.R.I.B.A., 16, Cross-street, Barnstaple.....	1
Thos. Arnold, Castle Buildings, Llanelly.....	1
A. R. Pannett, Architect, Haywards Heath, Sussex.....	1
J. Earnshaw, Architect, Bridlington.....	1
M. A. Robinson, M.R.I.A.I., Richmond-street, Londonderry.....	1
John Greene, Knockane, Ballycough.....	1
The Director of Works Dept., Admiralty, Northumberland-av., W.C.....	5
Ernest Borissow, Architect, 151, High-street, Huntingdon.....	5
Henry Young, Architect, Millard-road, Bedford.....	6
R. Horsfall and Son, Architects, 22, Commercial-street, Halifax.....	6
J. Twelvetees, Architect, Sandy.....	6
Wm. Powell, Pontliff, Wales.....	8
T. Roderick, Architect, Aberdare.....	8
H. C. M. Hirst, A.R.I.B.A., 30, Broad-street, Bristol.....	8
The Secretary, 2, Langer-street, Hexthorpe.....	8
I. Ald Jones, Clerk, Blaenau, Mon.....	8
Augustus and Percy, Architects, Castle Hill, Lancaster.....	8
Samson and Goffin, Architects, Bingley.....	8
Balbo, Hopkinson, and Co., Architects, Keighley.....	8
The Rev. L. P. Davies, Vochriw.....	8
D. W. Jones, Board Schools, Pontliff, Wales.....	8
The Rectory, Llanberis, Wales.....	8
R. L. Roberts, Architect, Victoria Chambers, Abercarn.....	8
T. Price, Green, Pontliff, Wales.....	8
Bedford and Kitson, Architects, Greek-street Chambers, Leeds.....	8
W. and T. R. Milburn, Architects, 20, Fawcett-street, Sunderland.....	8
E. M. Bruce Vaughan, F.R.I.B.A., Architect, Cardiff.....	9
Holman and Goodham, Archts., 6, King's Bench-walk, Temple, E.C.....	9
Jesse Horsfall, F.R.I.B.A., Tadmorden.....	9
Jefferson Brough, Black Lion, Kingston.....	9
H. A. Cutler, A.M.I.C.E., City Eng., Municipal Buildings, Cork.....	9
The Borough Engineer's Office, Town Hall, West Ham.....	9
Smith and Coggin, Architects, 14, York Buildings, Adelphi, W.C.....	10
C. A. Sharp, Architect, 11, Old Queen-st., Qn. Anne's Gate, S.W.....	10
H. J. Weaver, C.E., Borough Engineer, Town Hall, King's Lynn.....	10
T. J. Moss-Flower, A.M.I.C.E., 28, Baldwin-street, Bristol.....	11
The Director of Works Dept., Admiralty, Northumberland-av., W.C.....	12
W. Egerton, Surveyor, 12, Queen's-road, Erith.....	13
The Architect's Department, No. 18, Pall Mall East, S.W.....	16
Edwin T. Hall, F.R.I.B.A., 54, Bedford-square, W.C.....	17
Bishop and Pritchett, Architects, Swindon.....	18
T. Duncombe Mann, Clerk, Embankment, E.C.....	22
The Surveyor's Department, Town Hall, Paddington, W.....	Sept. 16
W. H. Willey, Architect, Queen-street, Burslem.....	
R. Beadall and Co., Clayton West, near Huddersfield.....	
H. E. and A. Bown, Architects, Harrogate.....	
33, Commercial-street, Maesteg.....	
J. Gummow, A.R.I.B.A., Egerton-street, Wrexham.....	
Chas. E. Butcher, Architect, 3, Queen-street, Colchester.....	
James, 11, Boscoby-street, Abertillery, Mon.....	
G. Griffiths, 10, Pool-road, Darnall.....	
Jowett Kendall & J. Harper Baker, Archts., Calverley Chmbrs., Leeds.....	
W. Rowntree Hague, C.E., Pentrefelin Works, Llangollen.....	
Henry J. Clarson, C.E., 22, Church-street, Tamworth.....	
William Bevan, Architect, 12, Buckingham-street, Strand, W.C.....	
Edgar Down, A.R.I.B.A., 31, High-street, Cardiff.....	
J. Simpson, Architect, 14, Acrefield, Bolton.....	
Albert Gorton, M.S.A., 24, The Crescent, Morecambe.....	
Chas. E. Butcher, Architect, 3, Queen-street, Colchester.....	
J. P. Briggs, Architect, Eppingham House, Arundel-street, W.C.....	
J. D. Townsend, Archt., Independent Buildings, Fargate, Sheffield.....	
J. P. Jones, Richards, and Budgen, St. Mary-street, Cardiff.....	
A. Neill, Architect, 18, Cookbridge-street, Leeds.....	
J. Nicholl, Eldon Chambers, Newport, Mon.....	
C. E. Butcher, Architect, 3, Queen-street, Colchester.....	
Freeman, Son, and Gaskell, Architects, 11, Carr-lane, Hull.....	
R. Castle and Sons, Architects, Bank Chambers, Cleckheaton.....	
J. Haggas and Sons, Architects, North-street, Keighley.....	
The Manager, Cardenden, N.B.....	
S. Moore Chadwick, Architect, Bindloss Chambers, Manchester.....	
C. W. G. Little, Donington House, Norfolk-street, Strand, W.C.....	
R. and T. Watson, Surveyors, 5, York-place, Edinburgh.....	
Greenhalgh and Brockbank, Architects, Bank Chambers, Southend.....	
S. Moore Chadwick, Architect, Bindloss Chambers, Manchester.....	
Athron and Beck, Architects, Doncaster.....	
Silvanus Treval, F.R.I.B.A., Architect, Truro.....	
W. W. Robinson, Architect, 10, King-street, Hereford.....	
S. Moore Chadwick, Architect, Bindloss Chambers, Manchester.....	
F. B. Smith, Architect, Port Talbot.....	
The Treasurer, 70, Strand-road, Bootle.....	

ELECTRICAL PLANT.

Bermondsey, S.E.—Meters.....	Borough Council.....	Kincaid, Waller, and Manville, Engineers, 29, Gt. George-st., S.W. July 1
Nelson Tramway Plant.....	Corporation.....	W. Alan Fraser, Borough Electrical Engineer, Town Hall, Nelson..... 1
Birmingham, A. Bow, L. Mains Extensions.....	Electricity Committee.....	The Borough Electrical Engineer, Glaucus-street, Bromley-by-Bow..... 2
Bradford—Electric Motors.....	Corporation.....	R. A. Chattock, City Electrical Engineer, Town Hall, Bradford..... 4
Trinity, Derby and St. Leonards.....	Electric Lighting Committee.....	Reginald P. Wilson, 66, Victoria-street, Westminster, S.W..... 6
Rio de Janeiro—Electrical Machinery.....	Brazilian Government.....	The Commercial Department of the Foreign Office, Whitehall, S.W..... 8
Mansfield—Electrical Plant.....	Corporation.....	Robert Hammond, M.I.C.E., 64, Victoria-street, S.W..... 12
Birkenhead—Fifteen Electric Tramcar Bodies and Equipments.....	Corporation.....	A. R. Fearnley, Tramways Manager, Brandon-street, Birkenhead..... 16
Talferth—Electric Lighting of Asylum.....	Brecon and Radnor Jt. Asylum Com.....	Giles, Gough, and Trollope, Archts., 28, Craven-st., Strand, W.C..... Aug. 5

ENGINEERING.

Willenhall, W. and L. Jones, Brook Bridge.....	Urban District Council.....	T. Edgar Fellows, Engineer, Town Hall, Willenhall..... June 25
Leeds, B. and S. L. Mid.....	Rural District Council.....	T. W. Willard, Surveyor, Rugby..... 26
Ardrossan—Pipelining.....	Town Council.....	A. Gillespie, Consulting Engineer, 65, Bath-street, Glasgow..... 26
Leeds, B. and S. L. Mid.....	Northumberland County Council.....	John Laughton, Factor, Eliabus, Bridgend, Islay..... 29
Hurst—Permanent Way of Tramways.....	Urban District Council.....	J. A. Bean, County Surveyor, Moot Hall, Newcastle..... 29
Kiln, North, H. and S. L. Mid.....	U.D. School Board.....	E. Garside, A.M.I.C.E., Town Hall Chambers, Ashton-under-Lyne..... 29
Nelson, Lancs—Conveyor Belt.....	Urban District Council.....	Walter Andrew, Architect, Parkstone..... 29
Edinburgh—Laundry Machinery and Fittings, City Hospital.....	Sewage Committee.....	D. G. Macdonald, Surveyor, Rugby..... 29
Campey Ash—Iron Footbridge.....	School Board.....	B. Ball, A.M.I.C.E., Borough Engineer, Nelson..... July 1
Peplar, E.—Condensing Plant, &c.....	Plomesgate Rural District Council.....	The Public Works Office, City Chambers, Edinburgh..... 1
W. and L. Jones, Brook Bridge.....	Borough Council.....	W. Hutchinson, Clerk, Barrow-in-Furness..... 1
Monaco—Jetty.....	Cork County Council.....	T. Waller Read, Clerk, Boardroom, Wickham Market..... 1
Courtham, Kent—Reconstructing Pier.....	Corporation.....	Leonard Potts, Town Clerk, High-street, Poplar..... 2
Croydon—Brick Sewer Culverts (1½ mile), Mitcham-road Dist.....	Monaco Government.....	J. G. M. McCarthy, Secretary, Court House, Cork..... 2
Westbourne Park, W.—Reconstructing, &c., Green-lane Bridge.....	Cork County Council.....	F. Caik, A.M.I.C.E., City Engineer, Guildhall, Worcester..... 2
Leeds, B. and S. L. Mid.....	Town Council.....	The Commercial Department, Foreign Office, Whitehall, S.W..... 2
Sidcup, Kent—Engines and Pumps at School Homes.....	Great Western Railway Co.....	J. G. M. McCarthy, Secretary, Court House, Cork..... 2
Newcastle-on-Tyne—Diversion of Railway Terrace.....	Magistrates and Council.....	The Deputy Borough Engineer's Office, Town Hall, Croydon..... 2
Hackney, N.E.—Mechanical Coaling Apparatus.....	Cork County Council.....	G. K. Mills, Secretary, Paddington Station, London..... 2
Newcastle-on-Tyne—Willing Bridges, Dunn-st. & Gas-house-l.....	Greenwich Union Guardians.....	T. Hunter, W.S., Town Clerk, City Chambers, Edinburgh..... 2
Sidcup, Kent—Sinking Well at School Homes.....	North-Eastern Railway Co.....	J. G. M. McCarthy, Secretary, Court House, Cork..... 3
Leeds, B. and S. L. Mid.....	Urban District Council.....	Thos. Dinwiddy, F.R.I.B.A., Crooms Hill, Greenwich..... 3
Madron, Cornwall—Waterworks.....	Electric Lighting Committee.....	C. A. Harrison, Central Station, Newcastle-upon-Tyne..... 3
	North-Eastern Railway Co.....	H. A. Johnson, M.I.C.E., 15, Exchange, Bradford..... 3
	Greenwich Union Guardians.....	B. A. Miller, Surveyor, 3, Chintaplace, Bedford..... 3
	Thingoe Union Guardians.....	Robert Hammond, M.I.C.E., 64, Victoria-street, S.W..... 3
	London District Council.....	C. A. Harrison, Central Station, Newcastle-upon-Tyne..... 3
	Urban District Council.....	Thos. Dinwiddy, F.R.I.B.A., Crooms Hill, Greenwich..... 4
		H. P. Adams, F.R.I.B.A., 28, Woburn-place, Russell-square, W.C..... 6
		J. W. Stanton, Clerk, Welsh-street, Chelmsford..... 6
		Frank Latham, C.E., Penzance..... 6

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14	14X14	5 " 9	7 "	1 10 0
16	16X16	6 " 10	8 "	2 2 0
18	18X18	7 " 11	9 "	2 15 0
20	20X20	8 " 12	10 "	3 10 0
24	24X24	10 " 14	12 "	4 10 0
27	27X27	11 " 16	14 "	5 5 0
30	30X30	12 " 18	15 "	6 10 0
36	36X36	15 " 21	18 "	8 15 0
42	42X42	17 " 24	21 "	11 15 0
48	48X48	20 " 28	24 "	14 17 6
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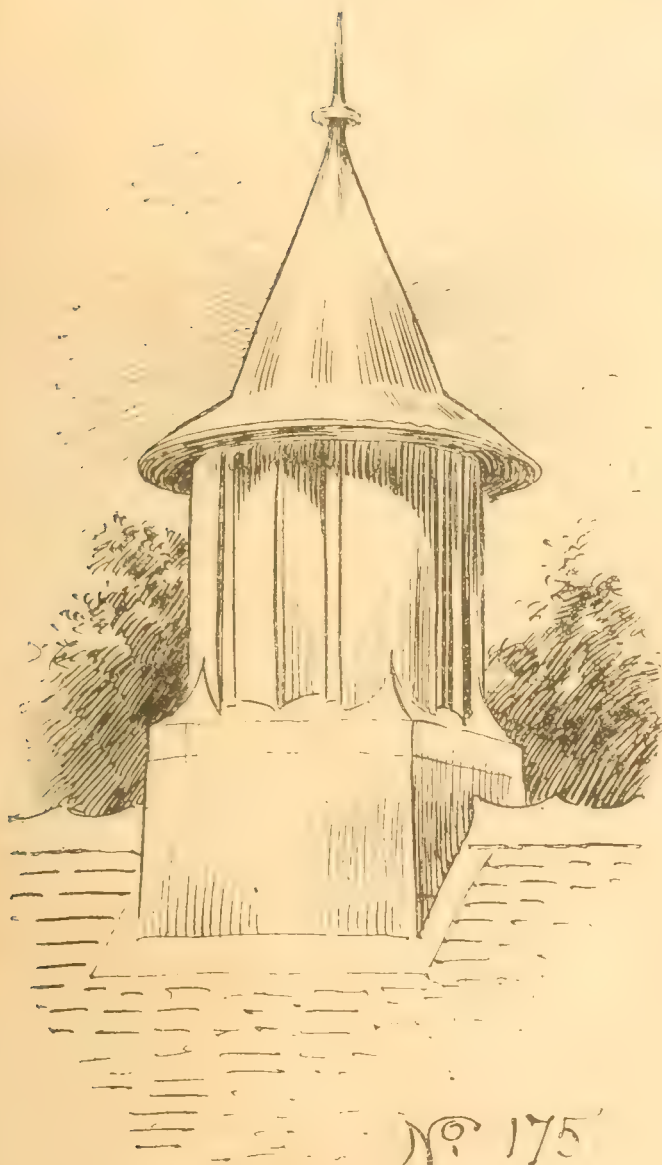
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ENGINEERING.

Alford—Sewerage Works	East Sussex County Council	F. J. Wood, A.M.I.C.E., County Surveyor, County Hall, Lewes.....	July 6
Alford—Sewerage Works	East Sussex County Council	James Huddart, Crown-street, Cokerham	6
Alford—Sewerage Works	East Sussex County Council	W. S. Barnes, Surveyor, Council Offices, Hanwell, W.	8
Alford—Sewerage Works	East Sussex County Council	Major H. Tulloch, C.B., R.E., 28, Victoria-st., Westminster, S.W.	8
Alford—Sewerage Works	East Sussex County Council	J. Blackburn, Secretary, 302, Buchanan-street, Glasgow	8
Alford—Sewerage Works	East Sussex County Council	John Price, M.I.C.E., City Engineer, Council House, Birmingham.	8
Alford—Sewerage Works	East Sussex County Council	John Gill, Surveyor, 4, Brecon-road, Abergavenny	8
Alford—Sewerage Works	East Sussex County Council	W. R. H. Chipperfield, A.M.I.C.E., Atherstone	8
Alford—Sewerage Works	East Sussex County Council	Thomas Rawcliffe, Surveyor, Bradhurst, Aighton, near Whalley	8
Alford—Sewerage Works	East Sussex County Council	W. R. Herring, Chief Engineer, New-street Works, Edinburgh	8
Alford—Sewerage Works	East Sussex County Council	J. E. Parker, A.M.I.C.E., Post Office Chambers, Newcastle-on-Tyne	9
Alford—Sewerage Works	East Sussex County Council	G. Bruce Tomes, Engineer, High-street, Mortlake, S.W.	9
Alford—Sewerage Works	East Sussex County Council	W. Stuart, B.E., M.S.I., Strabane	9
Alford—Sewerage Works	East Sussex County Council	F. Chambers, Manager, Hardwick Collieries, Heath, nr. Chesterfield	10
Alford—Sewerage Works	East Sussex County Council	C. W. Young, Secretary, Nicholas-lane, E.C.	10
Alford—Sewerage Works	East Sussex County Council	Styrelsens Expeditionskontor, Statsbanerne, Christiania	10
Alford—Sewerage Works	East Sussex County Council	H. Howard, F.S.I., Town Offices, Littlehampton	10
Alford—Sewerage Works	East Sussex County Council	John Frith, Engineer, Baslow, via Chesterfield	12
Alford—Sewerage Works	East Sussex County Council	S. Buchanan Smith, Solicitor, Crown Chambers, Salisbury	13
Alford—Sewerage Works	East Sussex County Council	A. T. Davis, County Surveyor, Shire Hall, Shrewsbury	13
Alford—Sewerage Works	East Sussex County Council	Alban Jolly, Surveyor, 9, High-street, Chorley	13
Alford—Sewerage Works	East Sussex County Council	Sir John Wolfe Barry, 21, Delahay-street, Westminster, S.W.	15
Alford—Sewerage Works	East Sussex County Council	J. Cartwright, Peel Chambers, Market-place, Bury	16
Alford—Sewerage Works	East Sussex County Council	W. T. Douglass, C.E., 15, Victoria-street, Westminster, S.W.	17
Alford—Sewerage Works	East Sussex County Council	J. Taylor, Sons, & Santo Crimp, Civil Engs., 27, Gt. George-st., S.W.	18
Alford—Sewerage Works	East Sussex County Council	J. H. Crowther, Great Float, near Birkenhead	18
Alford—Sewerage Works	East Sussex County Council	Sir John Wolfe Barry, K.C.B., 21, Delahay-st., Westminster, S.W.	20
Alford—Sewerage Works	East Sussex County Council	Sir John Wolfe Barry, K.C.B., 21, Delahay-st., Westminster, S.W.	20
Alford—Sewerage Works	East Sussex County Council	The Commercial Department, Foreign Office, Whitehall, S.W.	Aug. 1
Alford—Sewerage Works	East Sussex County Council	Harold Jevons, Town Clerk, Wigan	19
Alford—Sewerage Works	East Sussex County Council	Togamah Rees, C.E., Corn Exchange Chambers, Newport, Mon.	19
Alford—Sewerage Works	East Sussex County Council	F. Swinburne, Surveyor, Warblington	19

FENCING AND WALLS.

Alford—Sewerage Works	Urban District Council	Nelson F. Dennis, A.M.I.C.E., Surveyor, Aldershot	July 2
Alford—Sewerage Works	Urban District Council	J. Atkinson, A.M.I.C.E., Borough Surveyor, St. Petersburg, Stockport	4
Alford—Sewerage Works	Urban District Council	W. H. Schofield, County Surveyor, County Offices, Preston	6
Alford—Sewerage Works	Urban District Council	Arthur Fawcett, C.E., Wakefield	6

FURNITURE AND FITTINGS.

Alford—Sewerage Works	Guardians	C. Daniel, Clerk, Union Offices, Stoke-upon-Trent	July 3
Alford—Sewerage Works	Guardians	Sydney C. Smith, Clerk, Town Hall, Weston-super-Mare	3
Alford—Sewerage Works	Guardians	H. Ellis, Clerk, The Asylum, Winwick, Lancs.	4
Alford—Sewerage Works	Guardians	Michael M'Nelis, Clerk, Glenties, Ireland.	6
Alford—Sewerage Works	Guardians	C. Kift, Clerk, Guardians' Offices, Thorn-street, Reading	6

PAINTING.

Alford—Sewerage Works	School Board	T. H. Fleeming, Architect, 102, Darlington-street, Wolverhampton.	June 23
Alford—Sewerage Works	School Board	Moore and Crabtree, Architects, York Chambers, Keighley	23
Alford—Sewerage Works	School Board	J. P. Goldsmith, Clerk, Devonport	23
Alford—Sewerage Works	School Board	Medley Hall, Architect, Halifax	23
Alford—Sewerage Works	School Board	T. H. Spencer, Clerk, Jarrow	July 1
Alford—Sewerage Works	School Board	John M. Knight, 35, Bancroft-road, Mile End, E.	1
Alford—Sewerage Works	School Board	Jas. Redpath, 72, Methley-road, Whitwood Mere, Castleford	1
Alford—Sewerage Works	School Board	J. Lindsay, Interim Clerk, City Chambers, Glasgow	1
Alford—Sewerage Works	School Board	A. Ferrier, Clerk, Edinburgh	1
Alford—Sewerage Works	School Board	W. H. Ostler, Clerk, 22, Union-street, Halifax	1
Alford—Sewerage Works	School Board	Frank Howarth, Water Engineer, Municipal Buildings, Plymouth	2
Alford—Sewerage Works	School Board	Cancellor and Hill, 12, Jewry-street, Winchester	2
Alford—Sewerage Works	School Board	Col. S. Waller, Royal Engineer Office, 41, Charing Cross, S.W.	3
Alford—Sewerage Works	School Board	Jno. F. Moss, Clerk, Sheffield	3
Alford—Sewerage Works	School Board	Wade and Turner, Architects, 10, Pitt-street, Barnsley	3
Alford—Sewerage Works	School Board	Joseph H. Hirst, City Architect, Town Hall, Hull	3
Alford—Sewerage Works	School Board	E. Richards, Clerk, Owen-street, Tipton	3
Alford—Sewerage Works	School Board	James Leeming, Clerk, Museum-street, York	6
Alford—Sewerage Works	School Board	J. Huddart, Crown-street, Cokerham	6
Alford—Sewerage Works	School Board	John T. Morton, Solicitor, Argyle-street, Halifax	6
Alford—Sewerage Works	School Board	R. Horsfall and Son, Architects, 22, Commercial-street, Halifax	6
Alford—Sewerage Works	School Board	The Secretary, 2, Langer-street, Hexthorpe	8
Alford—Sewerage Works	School Board	Bedford and Kitson, Architects, Greek-street Chambers, Leeds	8
Alford—Sewerage Works	School Board	E. Corbridge, Clerk, Parkgate, Rotherham	9
Alford—Sewerage Works	School Board	H. J. Weaver, C.E., Borough Engineer, Town Hall, King's Lynn	10
Alford—Sewerage Works	School Board	John H. Genn, Clerk, Union Offices, Falmouth	10
Alford—Sewerage Works	School Board	John H. Genn, Clerk, Union Offices, Falmouth	10
Alford—Sewerage Works	School Board	J. Hepburn Hume, Clerk, Tower House, Tower-street, Ipswich	16
Alford—Sewerage Works	School Board	A. Saxton Snell, F.R.I.B.A., Southampton Bldgs., Chancery-l., W.C.	18
Alford—Sewerage Works	School Board	Bulter, Watson, and Glesby, Architects, 12, East-parade, Leeds	18
Alford—Sewerage Works	School Board	Peter Thomas, Pencelli Hotel, Treorchy	18

ROADS AND STREETS.

Alford—Sewerage Works	Urban District Council	J. W. Liversedge, Surveyor, Byron-street, Ashton-in-Makerfield.	June 23
Alford—Sewerage Works	Urban District Council	R. Ridge, Surveyor, Croxson	23
Alford—Sewerage Works	Urban District Council	R. Gardner, Surveyor, Langley Moor, near Durham	23
Alford—Sewerage Works	Urban District Council	W. Birrell, Surveyor, 200, High-street, Kirkcaldy	24
Alford—Sewerage Works	Urban District Council	Wm. Pare, Surveyor, George-road, West Bridgford	24
Alford—Sewerage Works	Urban District Council	R. Morham, Architect, P.W. Office, City Chambers, Edinburgh	24
Alford—Sewerage Works	Urban District Council	H. T. Neilson, Surveyor, Horse Market, Darlington	24
Alford—Sewerage Works	Urban District Council	R. M. Gloyne, A.M.I.C.E., Boro' Eng., Town Hall, Eastbourne	July 1
Alford—Sewerage Works	Urban District Council	David J. Beatson, Engineer, Whitened Park, Parkend, Coleford	2
Alford—Sewerage Works	Urban District Council	The Surveyor's Department, Town Hall, Catford, S.E.	2
Alford—Sewerage Works	Urban District Council	N. F. Dennis, A.M.I.C.E., Surveyor, Aldershot	2
Alford—Sewerage Works	Urban District Council	W. H. Prescott, A.M.I.C.E., Engineer, 712, High-road, Tottenham	2
Alford—Sewerage Works	Urban District Council	Geo. Siddons, Surveyor, Thrapston	2
Alford—Sewerage Works	Urban District Council	The Surveyor's Department, Town Hall, Catford, S.E.	2
Alford—Sewerage Works	Urban District Council	H. H. Scott, Borough Surveyor, Town Hall, Hove	3
Alford—Sewerage Works	Urban District Council	H. E. Stilgoe, A.M.I.C.E., Boro' Surveyor, Town Hall, Dover	3
Alford—Sewerage Works	Urban District Council	H. A. Winsor, Town Clerk, Kingston-upon-Thames	3
Alford—Sewerage Works	Urban District Council	Alfred Fidler, A.M.I.C.E., Borough Surveyor, Southend	4
Alford—Sewerage Works	Urban District Council	C. J. Owen, Surveyor, Dee Banks, Chester	4
Alford—Sewerage Works	Urban District Council	W. H. Schofield, County Surveyor, County Offices, Preston	6
Alford—Sewerage Works	Urban District Council	Thos. A. Busbridge, C.E., District Surveyor, Spilsby	6
Alford—Sewerage Works	Urban District Council	J. Jepson, Surveyor, Guardian Chambers, Tiviot Dale, Stockport	6
Alford—Sewerage Works	Urban District Council	J. Platts, Architect, High-street, Rotherham	9
Alford—Sewerage Works	Urban District Council	John G. Morley, Borough Engineer, Town Hall, West Ham, E.	9
Alford—Sewerage Works	Urban District Council	M. W. Jameson, Boro' Eng., 15, Great Alic-st., Whitechapel, E.	13
Alford—Sewerage Works	Urban District Council	F. W. Bowden, A.M.I.C.E., Surveyor, Public Offices, Grassendale	14
Alford—Sewerage Works	Urban District Council	G. J. Creed, Clerk, Epping	14
Alford—Sewerage Works	Urban District Council	H. Bagshaw, High-street, Uttrother	14
Alford—Sewerage Works	Urban District Council	T. E. Davidson, Architect, 14, Neville-street, Newcastle-on-Tyne	14
Alford—Sewerage Works	Urban District Council	William Tanner, County Surveyor, Newport, Mon.	14

SANITARY.

Alford—Sewerage Works	Urban District Council	A. F. Long, Town Engineer, Warminster	June 29
Alford—Sewerage Works	Urban District Council	William Spinks, 23, Park-row, Leeds	29
Alford—Sewerage Works	Urban District Council	A. Brown, M.I.C.E., City Engineer, Nottingham	29
Alford—Sewerage Works	Urban District Council	W. H. Radford, C.E., Albion Chambers, King-street, Nottingham	July 1
Alford—Sewerage Works	Urban District Council	Chas. W. Cockersoll, Surveyor, South Bank	1
Alford—Sewerage Works	Urban District Council	Conifers, Kirby, and Son, Engineers, Skinner-street, Newport, Mon.	1
Alford—Sewerage Works	Urban District Council	Thomas Bates, Clerk to the Council, Sudbury	1
Alford—Sewerage Works	Urban District Council	The Deputy Borough Engineer's Office, Town Hall, Croxson	2
Alford—Sewerage Works	Urban District Council	Nelson F. Dennis, A.M.I.C.E., Surveyor, Aldershot	2
Alford—Sewerage Works	Urban District Council	Thomas Elliott, Architect, Enniskillen	2
Alford—Sewerage Works	Urban District Council	W. T. Lawrence, Clerk, Council Offices, Millom	3
Alford—Sewerage Works	Urban District Council	G. E. Bond, Architect, Pier Chambers, Chatham	3
Alford—Sewerage Works	Urban District Council	H. H. Humphries, Dis. Eng., Public Hall, Erdington, Birmingham	3

